

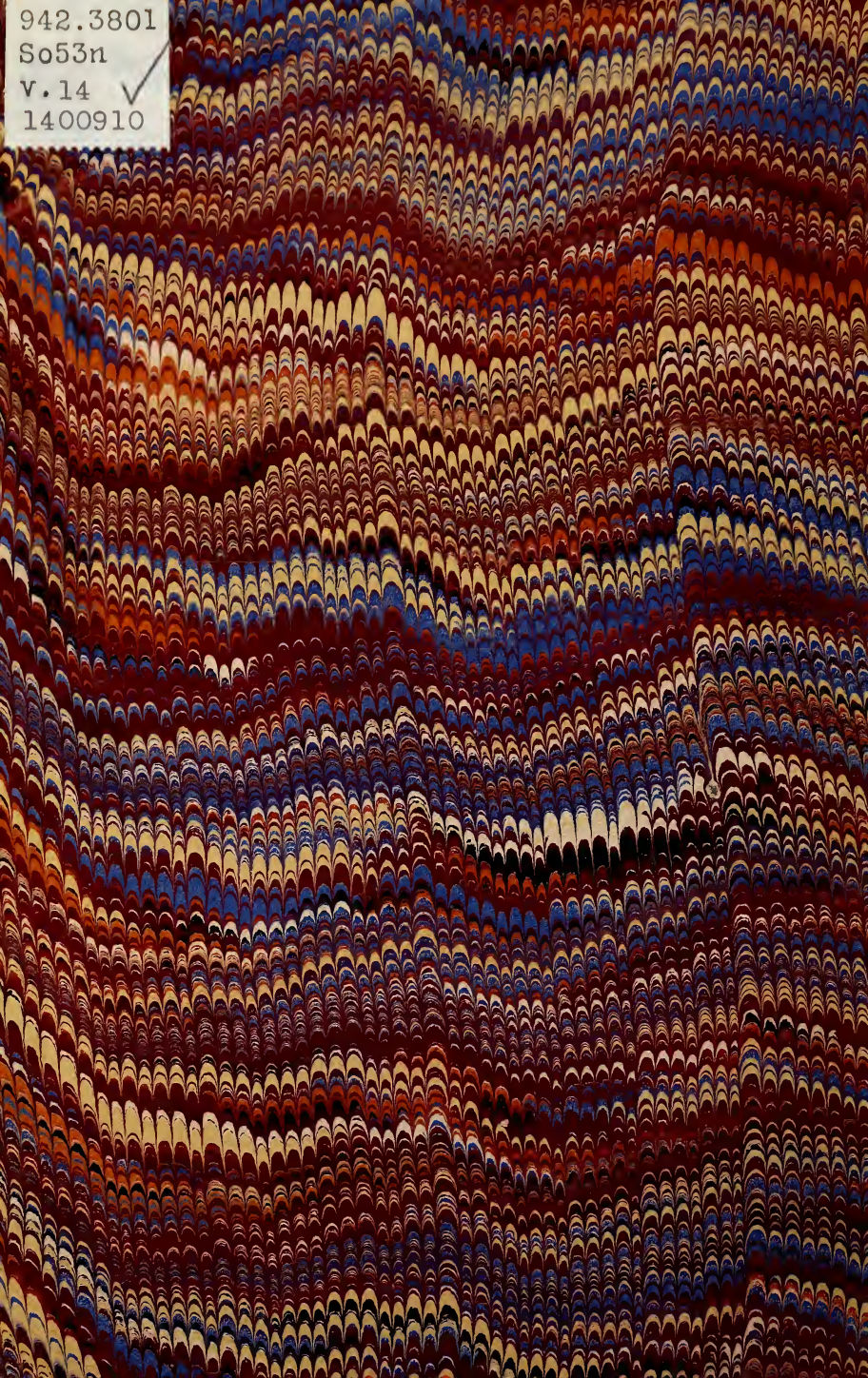


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SOMERSETSHIRE  
Archæological and Natural History Society

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PROCEEDINGS DURING THE YEAR 1867

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VOL. XIV





SOMERSETSHIRE  
ARCHAEOLOGICAL  
and  
NATURAL HISTORY  
SOCIETY'S PROCEEDINGS 1867



VOL. XIV

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TAUNTON

FREDERICK MAY HIGH STREET  
LONDON LONGMANS GREEN READER AND DYER

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## Preface.

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THE Publication Committee have the pleasure to inform the Members of this Society that by the courteous permission of the Council of the Palæontographical Society, Mr. Wm. Ayshford Sanford has had printed, at his own expense, a limited number of all the lithographic plates of specimens of *Felis spelæa* in the Museum of the Society, published in the Palæontographical Journal, and referred to in the catalogue printed in this volume. Copies of the Catalogue of Feline Fossils in the Museum, have been printed on large paper, which together with the Illustrations may be obtained by Members of the Society at 4s. each. An early application is necessary, the number printed being limited.



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PROCEEDINGS  
OF THE  
SOMERSETSHIRE ARCHÆOLOGICAL AND  
NATURAL HISTORY SOCIETY,  
FOR THE YEAR 1867.

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PART I

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THE Nineteenth Annual General Meeting was held at BRISTOL, on the 27th August, 1867, under the presidency of Sir EDWARD STRACHEY, Bart. The President on taking the chair said :—When our Society last year resolved that our next meeting should be held at Bristol, I felt some misgiving as to the propriety of our thus crossing our own border and entering our neighbours' territory. But this misgiving was dissipated when I learnt with what hearty zeal the prospect of our coming was welcomed by the gentlemen of Clifton and Bristol, who formed themselves into a committee to make the arrangements for our meeting—a welcome not of words only, but of deeds—of a generous expenditure of their time and labour and money—so that we cannot but feel that we are not come as questionable intruders, but rather as old and

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intimate friends, who may without impropriety invite themselves to their neighbours' houses. And I would, on behalf of our Society, take this opportunity of offering our sincere thanks to the local committee and secretaries for all their kind and obliging labours. It may be in the recollection of some members of the Society, that at a former meeting, one of our then Secretaries, whose retirement from ill health we so much regret, though we welcome his presence to-day—I mean Mr. Browne—mentioned to the meeting, as a matter of some interest, the existence of a Manuscript History of Somersetshire, by my ancestor, John Strachey. I have here the proposals for its publication, which were printed in 1736; but it has remained in manuscript among the family papers, and only occasionally been brought to light for a moment. It was not known to Collinson; and though I have not attempted any considerable comparison of the two histories, I may say that, as far as I can judge by those parts which relate to my own neighbourhood, John Strachey's researches, which were carried on for 40 years, extended farther than those of Collinson's among ancient records, and that he has preserved many of those local details which give life and interest to a county history, but which are not mentioned by Collinson, and no longer exist in our oral traditions. I have placed the greater part of the manuscript in the temporary museum, and shall be happy to give further information respecting it to any gentleman whom the subject interests; and also a map of the county, which was made by John Strachey, from his own surveys, and which was published, or at least sent to subscribers, though I have not met with any copy but my own. I will not now detain you longer from the business of the meeting, but call on our Secretary to read the Report.

Mr. R. G. BADCOCK, (hon. sec.) then read the following Report of the Council for the past year :—

REPORT OF THE COUNCIL, 1867.

“The Council have the pleasure to report that the Society now in its 19th year continues to receive the support of its Members. It pursues its wonted course, and while it has not to report any extraordinary event during the year past, it has the satisfaction to record an increase in the number of its Members, and that the interest in the objects and pursuits of the Society is unabated.

The Council regret that the publication of the 13th Volume of your Proceedings has been unavoidably delayed. This arises mainly from an ardent desire of the contributors—volunteers be it remembered—that their papers should be entirely worthy of your acceptance, and sustain the character of your publications. However, the Council hope the volume (of which the greater part is nearly ready for binding, the remainder being either ready or preparing for the press) will soon be in the hands of the Members, and that it will be at least equal to any that have preceded it.

For want of available space and other appliances, the Museum in some departments is not so complete and well arranged as the Council could desire, and they recommend as a rule, that hereafter only specimens that illustrate the Zoology, Botany, and Geology of the County, and antiquarian relics found within its borders, or immediately connected with its history, be admitted. Judicious and careful weeding may also be pursued with advantage. Recent changes have increased the accommodation in the Museum and will promote the arrangements which the Council have had in contemplation for some time past.

The Council would urge upon the Society the necessity of impressing on the public great caution and care in any works of restoration, and particularly in Church Restoration ; and in the language of a Sister Society would say, ‘Let the spirit of preservation exert a strong influence on your work, restore as accurately as possible what is gone, and preserve what remains.’ New work is easier, but however well done, no copy can ever realise the original.

The Council announce with much regret the retirement of two of your Secretaries, and the absence of the third from England. Whatever success the Society has achieved is greatly owing to them, and their loss is therefore severely felt, and the thanks of the Society are eminently due to them for their services. It devolves upon this Meeting to appoint two new Secretaries at least, and to provide a *locum tenens* for the third till his return to England.

The income of the Society would meet the expenditure, provided the Members would promptly pay their subscriptions, and not allow them to be in arrear. The collection entails considerable expense, which the Council think might be avoided by the Members availing themselves a little more of the services of their bankers as suggested in the Society’s circular.

In conclusion the Council desire to express their thanks to the President, to the Mayor of Bristol, to the Members and Honorary Secretaries of the Bristol Committee, the Bristol Architectural and Archæological Society, the Bristol Naturalists’ Society, and the Bath Natural History and Antiquarian Field Club, and also to the Bristol and Exeter Railway Company, for their cordial co-operation in promoting the views of the Society on their visit to this city.

Annexed is the Account of the Society for the year





The Secretaries were appointed as follows : Mr. W. A. Sanford, Dr. Pring, Mr. R. G. Badcock, General Secretary ; Rev. W. A. Jones, Honorary Secretary.

The Local Secretaries were re-elected with the addition of Mr. W. F. Elliot, and Dr. Kelly.

The following gentlemen were elected Members of the Committee : Mr. H. Alford, Mr. J. Hamilton, Mr. E. Beadon, Captain Doveton, Rev. W. T. Redfern, Mr. H. J. Alford, Mr. O. W. Malet.

Colonel PINNEY said he believed that some Members were not present because they disapproved of the Society stepping over its borders. For himself he did not see why they should not go into neighbouring counties, some of which had no Archæological Society of their own, especially as this Society had now been in existence for some years, and had gone over most parts of its own county. If the border was not extended, it would be necessary to go over the same ground a second time to some extent. Referring to the projected excursion on Thursday, Colonel Pinney said they would then have an opportunity of criticising the improvements and alterations which the President had been making at Sutton Court.

The Rev. F. BROWN stated that a friend of his had suggested Milborne Port as the next place to be visited.

Mr. E. A. FREEMAN stated that if the Society had done wrong in coming to Bristol, the scourges ought to fall upon his back, for he was the wrong doer. He made the recommendation to visit Bristol, but he did not do so without strong grounds. He maintained that they could not properly and completely discharge their functions, unless they took into their sphere of operations, at least for once, a city which was so closely connected with them. A large part of Bristol was really in Somersetshire, and that part

contained a most important object—namely, Redcliff Church. Some of the Bristol churches were essentially in their architecture, types of the Somersetshire churches, and the Society could not complete its archæological surveys without inspecting those churches.

The President then called upon Major THOMAS AUSTIN F.G.S., who, after a few introductory remarks, read the following document, copied from an unpublished State Paper, endorsed

21st October, 1586. "*Samuel Norton to my Lady Cobham.*"

"Good Madam—As I have not often, I hope, byne troublesome unto youre honnor in requests, so I beseeche you, cast me not of in this for I have presumed herein to taste the benefytt of youre ffriendshippe—soe hit is that whether through the envy of Sir Henry Barkeley, or my Lord of Pembroke's discourtesy, my chardge of horsemen, which were appoynted unto me in my Lord of Bedford's tyme, is taken from me and bestowed I hope in shoue far meaner. Although I know myself on being a horseman as able as Somersetshire hath anye—I crave not that again which I then possessed in my father's lyfe time, Less able then now I am—But I beseeche you be a meane to my Lorde of Pembroke to preferr me to a chardge a littell higher,—that under hym—I may be the Leftenant Generall of the horsemen in Somersetshire and Leader of the late increased Companye of Petronells\*—to which Effect, I have, by rude Lynes trubled my Lorde Cobham; and am veary sure that yf youre Ladyshippe move my Lady Pembroke herein, the speed will be the better, and my Lorde of Pembroke the easier to graunt—good Madam—I hope my earnest letters shall not be offensive to youre good La: And soe in humble wyse—my wyff's humble dutye remembered—I comyt youre honor to the Tuition of the Almighty.

Leigh† October the 21st, 1586.

Your Ladyshippe's to Command,

SAMUEL NORTON. ‡"

"To the honourable and his veary good Ladye—  
the Lady Cobham—geve thes."

\* Petronel—An ancient firearm, intermediate in size between an ancient pistol and a modern carbine.

† Abbott's Leigh.

‡ Samuel Norton was grandfather of the preserver of Charles the Second.

Major AUSTIN then read from State Papers the following list of martial men in the county of Somerset at the time of the threatened Spanish invasion, who had not been called into service then, which was an interesting relic.

“June 29, 1588, Spanish Armada.

“The names of Martial Men restant (*i.e.* remaining unemployed) in the County of Somerset.

Roger Sydenham, who hath served in Flanders, and sithence with charge in Ireland under the Earl of Essex. A gentleman for that skill very well accompted of in this county.

Mas'er J. Maye hath served in Flanders.

Master Rich. Pollard, an ancient soldier, but not lately employed.

Mr. Rich. Phillipis hathe served in Spaine.

Mr. Gregorie Morgan, a Lieut. in Ireland.

Mr. Roger Issham, a servitor in Ireland.

Mr. Simon Vynecombe, a Lieut. in the Lowe Countries.”

These are the names of persons in Somersetshire who had not been called into service on the threatened Spanish invasion, and who were still available for military duty, if required. We may imagine that Somerset, with these exceptions, had sent forth all her armed warriors to repel the threatened invasion; and that Somerset men of the olden time were as ready to hazard their lives and fortunes in defence of their country as are the men of the present day.

Mr. R. G. BADCOCK next read the following paper by the the Rev. J. M. KING, of Cutcombe, on the

### Origin of the Name of the Devonshire Junket.

When I was at Sorento I observed among the lists of sweets for the table, “Junketto.” I asked for it to compare it with our Devonshire Junket, and found it a very much simpler preparation, merely milk coagulated to a consistency about half-way between our cream-cheese and junket. A few days afterwards, on the Tarpeian Rock, the common drying ground of that quarter of Rome, I



heard a man with a basket on his arm crying “Junketto,” and selling it (as their dinner) to the young washerwomen who were congregated there. As each approached he opened his basket, and in return for a biocco, their small copper coin, took out a square of a substance very much resembling curds, enclosed in a little cradle of rushes. Here, then, was the Latin “juncus,” and the palpable origin of our Devonshire term. Doubtless our forefathers, or rather foremothers, presented their guests with a plainer preparation on a plate of rushes, which luxury has eliminated into the delicious compound that now appears in a crystal bowl.

If the black eyes and little forms of the young washerwomen of Rome do not muddle the recollections of his Latin, the young Englishman will go back to his Virgil and quote the lines :—

Quod surgente die mulsero, horisque diurnis,  
Nocte *premunt* ; quod jam tenebris et sole cadente,  
Sub lucem exportans *calathis* adit oppida pastor.

Georg. iii., 400.

I think the words I have underlined point evidently to the milk carried into the city in its coagulated form precisely as I saw it : a custom that centuries had not changed.

Mr. BADCOCK also read the following from the same gentleman, relative to

### Thomas a' Becket's Day.

A belief prevails throughout the moor district of West Somerset, and extends into North Devon, that turnip seed sown on Thomas a'Becket's day (the 4th of July I believe) never fails to produce a crop. You are puzzled at first to discover how the saint, whose shrine is in an

eastern county, becomes a patron, in the distant west, of a root unknown to the agriculture of his time, until, in the village church that overhangs Mort Bay, near Ilfracombe, you stand by the tomb of the Traceys, who, after the commission of their crime in Kent, fled for concealment to the opposite extremity of England. The life of penance and exile which the murderers led would proclaim most effectually to a barbarous people, which I suppose we must confess our moorland friends at that date were, the miracle-endowed holiness of their victim. The turnip, we must conclude, has only taken the place of some more venerable root. I have no doubt, in my own mind, that the superstition had its origin from the parish of Mort itself, whose inhabitants would be impregnated with the double credulousness of the dwellers on the hills and by the ocean. Those acquainted with the *Res rusticæ* of the Romans as opened to us in the Georgics will readily acknowledge this. Witness the husbandman's omens for fine weather drawn in one line from the swine in his straw-yard, in the next from the halcyons on the beach. With this last fits the universal belief of country people in the prophetic powers of the magpie—powers first noticed by the fisherman, who observed, that if on passing through the field, between his cottage and the shore, he met the two birds pacing about together, his boat was secure from a storm, whereas the presence of one only was always followed by a tempest; the *fact* being a simple one of natural history, that the instinct of the birds tells them when the nest may be safely left unprotected, and when it is requisite for one householder to watch beside or rather upon it; the *inference* being one that superstition has expanded to take in events never dreamt of in the philosophy of the birds.

## The Excursion.

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### Bristol Cathedral

was then visited, over which the company were conducted by Mr. E. A. FREEMAN.

Mr. FREEMAN first pointed out the main features of the church from the site of the cloister. He called attention to the fact that it was not originally an episcopal church, nor the church of a monastery of the first rank. It therefore could not enter into any fair comparison with our great cathedral and abbey churches. Moreover it was only a fragment of the original building, the nave having been destroyed ; still there was quite enough to show the complete arrangements of a monastic church, as distinguished from those secular churches like Hereford and Wells. The monastery was originally founded by Robert Fitzharding, in the twelfth century. No part of his work was now visible in the church ; but the chapter-house of his time, or a little later, was one of the best specimens surviving of a Norman chapter-house. It was easy to trace the original height of the nave and transepts, which were on quite a small scale, much lower than the present building. There had evidently been a design entertained in the fourteenth century of re-building the nave, and the fragments showed that it had been actually begun. However, that nave seemed never to have been finished, and the Norman nave had certainly vanished. Mr. Freeman went inside and pointed out the internal peculiarities of the building. Except the Early English chapel at the north side, the choir, choir-aisles, and Lady chapel, formed a perfect work of the fourteenth century, in a style which marked a stage in the developement of the local forms of architecture, as a con-

siderable approach had been made both in the mouldings of the piers, and in the tracery of the windows, to the local Perpendicular of Somersetshire. The main peculiarity of the building was to be found in the choir, aisles, and Lady chapel, being all of one uniform height ; the elevation consisting merely of piers and arches without any triforium or clerestory. In the original arrangement, the high altar was advanced several bays from the east end ; its position being well marked by the difference in the roof between the choir and the Lady chapel to the east of it. The choir and presbytery occupied the space from this point westward, to the eastern arch of the lantern. The destruction of the nave caused everything to be thrust eastward. The Lady chapel was taken into the choir, and the high altar placed under the east window. The western part of the choir was taken to form, with the crossing, a new nave, and the new choir was fenced off by a screen, which bore the initials of Henry the Eighth, and Edward, Prince of Wales. At the same time, as the church was now raised to cathedral rank, a bishop's throne was introduced, somewhat perhaps, like a four-post bed, but which after three hundred years, had got to look fairly venerable. All this, he was sorry to say, was now gone ; the screen had vanished, the throne had vanished also ; it had given way to a much meaner one, and all the properties of choral arrangement had been broken down by setting up another throne opposite, rather finer than the bishop's, for the Dean ! Mr. Freeman strongly condemned the whole of the existing arrangements, which would only be brought out into a stronger light by the expected re-building of the nave.

The Rev. CANON NORRIS, gave some interesting particulars in reference to the building. Referring to the Austin Canons who formerly occupied it, he mentioned in-



cidentally an investigation which was made about 400 years ago by the then Bishop of Worcester, into their conduct. It was reported to the bishop that they kept their hunters and hounds, and he sent down some one to inquire into the matter. The doors of that part of the building in which the animals were kept were all made fast, and the messenger returned and reported that he could see nothing of the kind. The suspicions of the bishop, however, were not removed, and he determined to investigate the matter for himself. Keeping his determination in secret, he put on his scarlet coat—if huntsmen did wear scarlet in those days—and joined in the hunt. Subsequently he assembled the canons and challenged them with the fact, and on their denying it, he pointed out to one, saying, “I saw you go over such-and-such a fence,” to another, “You came to grief in that ditch.” The canons were thus caught, and there was a document in existence in which they made a promise to keep no more hunters or hounds. With regard to the nave, he rejoiced to say that at the next meeting of the Society it would be rising from the sod, and that, thanks to the noble spirit of the citizens of Bristol, the disgrace which had attached to them for three centuries was about to be wiped out. He gave some extremely interesting evidence, including that of William of Worcester, in 1488, to show that a nave was in existence at that time, and then gave some particulars of the steps which had been taken to secure its re-building.

A brief visit was paid to the Mayor’s Chapel, and from thence the company proceeded to

### St. Mary Redcliff Church,

where Mr. FREEMAN directed attention to the artistic character of the structure, observing that it stood alone amongst English parish churches in that it was vaulted

throughout. The Perpendicular principle was carried out to its fullest development in Redcliff, though there was a great deal of the earlier style apparent. The vault of the church did not altogether please him, and in fact it was done at a rather unlucky time, when a good form of vaulting had gone out of fashion, and another good form was struggling into existence. The simple form of vaulting was gone out, and the fan tracery, as seen to perfection in King's College, had not then come in, and it seemed at Redcliff as if they were feeling after it, but had not got it. Mr. Freeman noticed the great height of the clerestory, that, he said, was similar to that at Sherborne, Bath, and Christ Church, Hampshire. Still, however, the style was essentially the Somersetshire one, and it seemed to be the natural modification of the Somersetshire parish church, when carried out on the scale of a minster with vaulting. The speaker congratulated the people of St. Mary Redcliff on their speedily getting rid of the monstrous organ case at the west end, when they would be able to see the full proportions of the nave and a west window. He hoped that they would also have a good reredos; he meant a high one, as in some places the people had the reredos low, under the notion of seeing into the Lady chapel. He might, however, say that this chapel was not meant to be looked into from the main body of the church.

The Rev. H. G. RANDALL, Vicar of St. Mary Redcliff, said that Mr. Godwin, their architect, was unavoidably absent at Manchester that day, or he would have attended the meeting. With regard to the reredos, he was glad to hear what Mr. Freeman had said, as they intended to have a high one, although their object was not entirely to exclude the Lady chapel, but to show that there was something there. The organ screen at the west end would shortly be removed.

The party adjourned to luncheon at Colston's-rooms, near the church, by invitation of the vicar.

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## The Evening Meeting.

An Evening Meeting was held at the Fine Arts Academy.

The Rev. Prebendary Scarth read the following by Mr. E. W. GODWIN, F.S.A., in the unavoidable absence of that gentleman, on the

### Foundation of S. Mary and S. Mark, now the Mayor's Chapel, Bristol.

Sir Maurice de Gaunt, (ob. 1230) his brother Henry de Gaunt, (ob. 1268) and his nephew Robert de Gourney, (ob. 1269) have each had the honour imputed to them of founding this House. Tanner is in favour of the first, and says, "He seems to have made it subject to the Canons of S. Augustine." After his death Robert de Gourney made it a distinct House. In deeds dated 1259, 1278, 1316, Robert de Gourney is considered the original founder.

The foundation charter of Sir Maurice de Gaunt shows his object to have been solely the relief of twenty-seven poor people, and makes mention of one chaplain. His nephew's charter confirms the former grant, and provides three chaplains, and the relief of one hundred poor daily. Leland says that S. Mark's was, as he remembered, "cawillyd the Gauntes, otherwyse, Ben Horumes." Leland in his Itinerary says also, that "one Henrie Gaunte erected a College of Pristes with a Master, on the Green of S. Augustine Hospitales in ruin."

The Bishop of Worcester's ordinance 1259, called it an "Hospital," but says nothing of any poor or infirm inmates,

although the chaplains, clerks, and lay friars, are repeatedly mentioned. At the bishop's visitation, 1278, he discovered that for four years the alms of the poor had been "damnably omitted," and at the second visitation, six years later, the same complaint is urged.

In the inquisition taken 31 Henry VIII, the resignation is described as having been made by deed, "bearing date under the convent seal of the same late monastery." We see therefore that the charitable notion of old De Gaunt was so enlarged by his nephew De Gourney, between 1230 and 1267, as to lose all its original character, and became as much a Religious House as any Priory in Bristol. In 1278 we find that the amalgamation of the conventual with the eleemosynary institution had failed, and the conventual got the upper hand, and the Bishop of Worcester condemns the perversion and misuse in 1284. In 1314 the brethren of S. Mark's made grievous complaints of poverty; and by letters patent of Edward II, the Bishop of Bath granted them the church of Stockland, and on a repetition of this complaint in 1326, he granted them the church of Overstowey.

The Priory was situated at the north-east side of College Green, and seems to have extended as far back as the Carmelites. Frog Lane bounded it on one side, and on the west ran the waters of the Frome. Orchard Street and Culver Street, occupy a portion of its site. "Culver" takes its name from *columbarium*, or Pigeon House, and the orchard or garden is mentioned by William of Wyrcester, but his notice of the House is singularly laconic, pp. 188, 247.

The chapel of the Gaunts is the only portion left of the old foundation, and a fragment of the winged lion of S. Mark (?) built into a house wall.

The original ground plan of the chapel was Transeptal without aisles, to which was afterwards added a Decorated aisle, westward. A late Perpendicular chapel being an extension eastward of the Decorated aisle, and eastward still a tower of the same late style, and in the place of the earlier transept further east another Perpendicular chapel opened from the tower. This chapel is one of the most important architectural works in Bristol, great part of it ranking in purity of style with the north chapel of the cathedral, but now sadly obscured by erections within for corporation purposes.

Mr. E. GREEN next read a paper, compiled from letters and scarce documents, on the Somersetshire Rebellion, which is published in Part II.

Votes of thanks having been passed, the meeting separated.

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## Second Day : Excursion.

The members met at the Council House, at Eleven o'clock, and were received by the Right Worshipful the Mayor (Mr. E. S. Robinson).

They were conducted to the Council Chamber, where the civic plate and muniments were laid out for inspection, and some time was spent in examining the many interesting relics of a past age which are preserved in the Council House. Among the chief objects of interest was the silver-gilt salver presented to the corporation in the sixteenth century by Alderman Kitchen. At the time of the Bristol riots it was stolen by James Ives, a man who was employed by the corporation to move their plate from the Mansion House in Queen's Square, to a place of greater security. Ives cut the salver into 167 pieces, and these he offered



for sale to Mr. Williams, silversmith, of St. Augustine's. The latter secured the assistance of the police, and Ives was taken into custody, and at his trial was sentenced to fourteen years' transportation for the theft. The pieces of the salver were afterwards rivetted together on a silver plate by Mr. Williams. The State and other swords were also much admired, especially the pearl sword given to the city in 1506, by John Willis, then Mayor of London. The other articles exhibited included the "Book of Wills," city seals, flagons, ewers, grace cup, badges, candlesticks, snuffers, chandeliers, maces, trumpets, &c.

Sir EDWARD STRACHEY having taken the chair, called upon the Rev. Prebendary SCARTH to read a paper on "Mediaeval Bristol," by Mr. E. W. GODWIN, this paper is printed in Part II. The paper was illustrated by two maps, one of which is the property of the corporation, and represents the city as it stood in the period from 1673 to 1710.

On the motion of the Mayor, a vote of thanks was passed to Mr. Scarth, and the company were afterwards hospitably entertained in the Mayor's parlour.

On leaving the Council House the party made a perambulation of the city, in illustration of the paper which had been read by Mr. Scarth ; the plan adopted being, first the Saxon, next the Norman, and lastly, the Mediaeval city. At

### S. John's Church

Mr. FREEMAN pronounced the crypt to be of the late fifteenth or early sixteenth century. A vaulted cellar under the shop of Mr. Leonard, ironmonger, High Street, was visited. The cellar is of the fourteenth century, and is in a good state of preservation. Other places in High Street were also visited, and among them the shop of Mr.

Tilly ; at the corner of High Street and Wine Street, and in the cellar there were apparent remains of a vaulted roof, similar to that at Mr. Leonard's. The next place was

### S. Nicholas' Church,

where the chief point of interest was the large crypt, in which service is occasionally held. Mr. Freeman said he had been told that this was a Norman crypt, and he was surprised to find it was of the fifteenth century, it being a good characteristic specimen of the local style of that period. He pointed out some of the characteristics of the style and remarked that the crypt being divided into two, suggested the idea that the original church was also of two bodies, with two equal naves side by side. The moat of the castle in Queen Street, was observed. Proceeding to the avenue to Castle Green, a house which was in ancient times the chapel of the outward guard, was examined. This was an object of much interest, the vault of the chapel being in an excellent state of preservation, and there being here also a fine old staircase. At the Bridewell, the Norman tower was described by Mr. Freeman. Greyfriars, St. James', and Colston House, (Small Street), were visited. The party then spent some time in

### S. Stephen's Church,

which Mr. Freeman said in some of its features carried out the characteristics of the Somersetshire Perpendicular to perfection. The pillars and arches especially were some of the best that could be seen anywhere, and the clerestory windows were high and fine, and belonged to the same type as those of Bruton, Martock, and St. Mary's, Taunton. The Churches of St. Werburgh and All Saints were also examined, and the perambulation was brought to a close

by a visit to Canynge's house in Redcliff Street, now in the occupation of Messrs. Jefferies and Son.

At the evening meeting held at the Fine Arts Academy, a paper "on the Geology of the Clifton Rocks;" was read by Mr. W. STODDART. This paper is printed in Part II.

The Rev. W. HUNT then read a paper "on the Rise of Bristol Trade," which is printed in Part II.

Votes of thanks having been passed to Mr. Stoddart and Rev. W. Hunt, the meeting closed.

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## Third Day : Excursion.

The members and their friends assembled at the Fine Arts Academy, at 10 o'clock, and notwithstanding a steady downpour of rain, started on the Excursion which had been arranged for the day. The first halt was at the

### Church of Whitchurch

which Mr. FREEMAN described as an excellent example of the earliest type of the Somersetshire churches of which there were any remains, and was the best worthy of study of any he knew, retaining, as it did, many of its original features, which in many cases had been very much altered. It was of the early local type, when the cross form seemed to have been very common ; and this form was preserved in this case, whereas in many of the earlier churches it had given way to the predominant west-end tower, as at St. Cuthbert's, at Wells. This church at Whitchurch was an excellent example of the transitional style towards the end of the 12th or the beginning of the 13th century, the corner shafts being among the best specimens of transitional work anywhere. Mr. Freeman pointed out some peculiarities in

the shafts and mouldings, and then said the church was originally a cross of a simple form, consisting of nave, chancel, and transepts only. In the 14th century a good deal was done to the church, and the east and transept windows were put in at that time. In the 15th century changes were made which completely altered the original arrangement of the building. An aisle was built on the south side, swallowing up the south transept. The lantern arch on that side was quite perfect, and the tower remained untouched, a good example of the tower of the period. The roofs of the nave and aisles seemed to be untouched, genuine examples of the local type of roof, and the chancel roof, which was a fair imitation of them. He was sorry to see that the walls were left rough and unplastered. This was thought a fine thing by some modern architects, but our ancestors did not do it, but used to plaster their walls. A new window had been placed in the aisle, to the confusion of the chronology of the building. If a new window were really wanted the architect might easily have put in one in character with the rest of the church.

The company then partook of refreshments which had been kindly provided for them in the schoolroom.

Mac's Knoll was the next place to be visited according to the programme, but in consequence of the unpropitious state of the weather it had to be abandoned, and the party proceeded to Norton Malreward Church and from thence to

### Stanton Drew Church.

Mr. Freeman discovering a ground plan of the structure hanging against the west wall, said that it needed a ground plan for any one to see where they were. The church

seemed to be one of those which, instead of a nave and aisles, consisted of two almost equal bodies, and they could hardly tell which was the nave and which the aisle. There was a side tower, and it might have formed a porch in itself; but the porch now was built right up against the original buttress of the tower. In detail there were only the queer capitals which were worthy of notice, and they were quite different from anything they had yet seen, being more like the capitals they found in Devonshire and at the other end of the county, of lozenge shape, and neither rich nor beautiful.

On leaving the church the party took shelter in a spacious barn near, where the Rev. Prebendary SCARTH gave an account of the Druidical Remains at Stanton Drew, previous to an inspection of the stones, which was afterwards made under the guidance of that gentleman. A paper on this subject is printed in Part II.

Votes of thanks were passed to the Rev. Prebendary Scarth; and also to Mr. Fowler, churchwarden, for the trouble he had taken in pointing out the position of some of the stones.

### Sutton Court

was the next place. Here the party met with a hearty reception from Sir Edward and Lady Strachey, and were entertained in a most cordial manner.

Mr. Freeman proposed the health of Sir Edward and Lady Strachey, alluding to the hospitality they had shown towards the members of the society, and speaking of the admirable manner in which Sir Edward had discharged his duties as president. Mr. Freeman also referred to the kindness which had been shown to the members of the society by the citizens of Bristol.



The Rev. F. Brown, of Nailsea, proposed the health of the gentlemen who had organised the present meeting, which was acknowledged by Mr. R. G. Badcock and the Rev. J. W. Caldicott.

Sir EDWARD STRACHEY then gave an interesting historical narrative, relating to Sutton Court, compiled chiefly from the unpublished history written by his ancestor, Mr. John Strachey. This is printed in Part II.

On quitting Sutton Court the party drove to Chew Magna, and in the church of that place Sir Edward Strachey gave some further important details from the MS. of his ancestor, relative to portions of the edifice, and explained the quaint monuments which are in the interior. Chew Court, the ancient palace of the bishops of the diocese, was also inspected.

The company then proceeded to the Manor House, where they were most hospitably entertained by Wm. Adlam, Esq., and Mrs. Adlam. Some time was spent in examining the interior of the house, as well as a collection of pictures illustrating local subjects.

Thanks were cordially presented to Mr. and Mrs. Adlam for their hospitality.

It had been intended to make an inspection of Dundry Church, but darkness was fast setting in, and the party therefore drove direct to Bristol.

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## Fourth Day : Excursion.

On Friday an Excursion was organized in which the members of the society were joined by the members of the Bristol Naturalists' Society, for the purpose of examining the geological features of the Avon gorge.

The members met at the Suspension Bridge and drove to Leigh Court, where they had been invited by Sir Wm. Miles to inspect his fine collection of paintings, &c. Returning to the Suspension Bridge the party under the able leadership of Mr. Stoddart, proceeded down the Zigzag, and examined the formation of the rocks as they went. They then followed the course of the Port and Pier Railway to Sea Mills, at which point they took the train to Shirehampton, and having crossed to Pill they were conveyed by rail to Portishead. Here several fossil beds were examined and the company dined together at the hotel. They returned to the city in the evening and the meeting was brought to a close.

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## Local Museum.

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Among the more interesting objects exhibited were the following :—

Corals from the Carboniferous Limestone of Clifton and the neighbourhood, including *Alveolites Septosa*, *Syringopora geniculata*, *Cyathophyllum regium*, *Lonsdaleia floriformis*, by Mr. SPENCER GEO. PERCEVAL.

A series of Bones from the caves on Durdham Down; specimens of *Thecodontosaurus* and *Palæosaurus*, from the Magnesian Conglomerate, Durdham Down, by the BRISTOL INSTITUTION.

A collection of Plants, being a general representation of the Flora of East Gloucestershire, including among the more interesting specimens *Helleborus viridis*, *Ranunculus parviflorus*, *Anemone pulsatilla*, *Thlaspi perfoliatum*, *Thesium linophyllum*, *Monotropa hypopitys*, *Epipactis grandiflora*, *Listera nidus-avis*, *Orchis ustulata*, *O. pyramidalis*, *Gymnadenia conopsea*, *Ophrys apifera*, &c., &c., by Mr. EDWARD DAVIES.

Specimens of Bristol Porcelain, in the style of the Sèvres China, with the usual Bristol mark, viz., a cross in blue, by Mr. THOS. TODD WALTON.

A collection of Roman-British fibulæ, studs, bronze armlets, rings, &c., discovered near Chepstow in 1861—some of them enamelled. A collection of Roman bone-hair-pins, &c.; ancient beads of various forms, &c., of the British, Roman-British and Anglo-Saxon periods; Anglo-

Saxon fibulæ, armlets, and buckles. A collection of Champion's Bristol old hard Porcelain, decorated in the Dresden and Sèvres style with festoons of flowers, &c. The manufactory was established at Castle Green, Bristol, in 1772, and in 1783 Mr. Champion resold his patent to Mr. T. Flight, who transferred it to the firm of Flight and Barr, so celebrated in Worcester. Also, four specimens of Bristol opaque White Glass, enamelled in colours by Michael Edkins, the grandfather of the exhibitor, Mr. WM. EDKINS.

A collection of curious old Deeds, in good condition, extending from the reigns of Edward I to William III, both inclusive, with the exception of the reigns of Edward V, Richard III, and James II, and the Commonwealth. A Roman Pig of Lead, found in the bed of the river Froome, in Bristol; most probably manufactured on the Mendip Hills and brought to Bristol for exportation to Rome, and accidentally lost in the river in the process of shipping. It bears the following inscription:—IMP. CAES. A . . . . . INI. AVG : PII P.P. From a close examination of it, it would appear to have been run into a mould at fifteen different times, that number of strata being visible; its weight is probably about one hundred and fifty pounds. By Mr. A. J. KNAPP.

A collection of the Lepidoptera of the neighbourhood of Bristol, by Mr. GEO. HARDING, jun.

Manuscripts and Maps relating to the early history of Somerset, by Jn. Strachey, an ancestor of Sir EDWARD STRACHEY, Bart.

An interesting series of early editions of the Bible, &c., selected from the valuable collection of Mr. FRANCIS FRY, F.S.A., Cotham, Bristol, including among others the following:—

1525-6, 8vo.—The First Testament in English, translated by Wm. Tyndale. An exact facsimile printed on stone, first traced by the pen from the only perfect copy in the Baptist College, Bristol, by Francis Fry, F.S.A., Bristol, 1862.

1530, Small 8vo.—The five Books of Moses, translated by Wm. Tyndale. At the end of Genesis is “Emprented at Malborow in the lande of Hesse by me Hans Luft” “1530 the 17 dayes of Januarý.”

1531, 8vo.—The Prophete Jonas, by Wm. Tyndale. Reproduced in facsimile, by Francis Fry, F.S.A., Bristol, 1863, from the only known copy, in the possession of Lord Arthur Hervey.

1534, Small 8vo.—The newe Testament, dylygently corrected and compared with the Greke by Willyam Tindale : and fynessed in the yere of oure Lorde God 1534 in the moneth of Nouember.

1535, Folio. — Biblia The Byble: that is the holy Scrypture, of the Olde and New Testament faythfully translated into Englyshe. 1535. Translated by Myles Coverdale.

1867, 8vo. — The Byble, by Coverdale, 1535. Remarks on the titles, the year of publication, the preliminary, the water-marks, &c., with facsimiles, by F. Fry, F.S.A.

1537, Folio.—2nd Ed. in Folio of Coverdale's Bible. *The first folio Bible known to have been printed in England.* The Byble, &c. as 1535: there is added to this edition, “and newly ouersene and corrected 1537. Imprynted in Southwarke for James Nycolson.”

1537, 4to.—Coverdale's Bible, same as the last, by the same printer, James Nycolson.

1537, Folio. — The Byble, &c., truly and purely translated into Englysh, by Thomas Matthew.



1539, Folio.—The Bible in Englyshe, &c. Printed by Grafton and Whitchurch, 1539.

1540, Folio. — The Byble in Englyshe, &c., with a prologue thereinto, made by reuerende father in God, Thomas, archbysshop of Cantorbury. Prynted by Edward Whytchurche. This Bible was fynished in Apryll, 1540.

1865, Folio.—A description of the Great Bible, 1539, and the six editions of Cranmer's Bible, 1540 and 1541, printed by Grafton and Whitchurch: also of the editions, in large folio, of the authorized version of the Holy Scriptures printed in the years 1611, 1613, 1617, 1634, 1640, by Francis Fry, F.S.A.

Examples of the Printing of Fust and Schoeffer, 1562. Latin Bible, folio, by Eggesteyn (1468), illuminated. Vencentias Natural History, folio, by John Mentelin, 1473, illuminated. The first Roman type used in Germany, by G. Zainer, folio, 1472. The Cologne Chronicle, by Johan Koelhoff, (1499) folio. Specimens by Peter Schoeffer, &c., &c.

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# The Museum.

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ADDITIONS SINCE THE PUBLICATION OF THE LAST  
VOLUME.

*Donations :—*

Journal of the British Archæological Association.

Sussex Archæological Collections, vol. XIX.

Proceedings of the Philosophical Society of Glasgow.

Journal of the Historic and Archæological Association of  
Ireland.

Journal of the Kilkenny and South East of Ireland  
Archæological Association.

Report for 1866 of the Smithsonian Institution, Wash-  
ington, U.S.

Proceedings of the Essex Institute, Mass. U.S.

Journal of the Royal Dublin Society.

Proceedings of the Bristol Naturalists' Society, vols. I  
and II.

Proceedings of the Bath Natural History and Antiqua-  
rian Field Club, no. II.

Devon Naturalists' Club Report.

Morkinskinna, Royal Sagas of Norway, from a MS.  
of the 13th century, from the Royal Norwegian Uni-  
versity, Christiana.

Two coloured Engravings of tessellated pavements at Ald-  
borough and Leicester; and a Drawing of portion of large  
horn of deer, found at Hamdon Hill, Mr. R. WALTER.

On Abnormal Conditions of Secondary Deposits, by the  
author, Mr. C. MOORE, F.G.S.

Authorship of the Practical Electric Telegraph of Great Britain,  
Rev. Dr. THOS. STEELE.

Collectanea Antiqua, parts iii and iv vol. VI.

On the Scarcity of Home-grown Fruits in Great Britain,  
Mr. C. ROACH SMITH, F.S.A.

Preparations of the County of Kent to resist the Spanish Armada.

Address to the Members of the Historic Society of Lancashire and Cheshire ; on Public Libraries, their use and National Profits,  
Mr. JOSEPH MAYER, F.S.A.

Essai sur l'ancien Glacier de la Vallée d'Argelès (Hautes Pyrénées), by the author M. CHARLES MARTINS, Montpellier.

Bronze celt found at Athelney ; an old bell-metal crock (I.P. 1671),  
Mr. WM. TROOD.

Chicken with four legs,  
Rev. H. HELYAR.

Cast of a large upper Canine of *Felis Spelæa*,  
Mr. W. BOYD DAWKINS, F.R.S., F.G.S.

*Purchased :—*

The Archæological Journal.

Palæontographical Society's Journal.

Ray Society, vol. for 1867.

*Deposited :—*

By Mr. W. J. L. STRADLING, *Chilton-Polden, from the valuable collections of the late W. Stradling, Esq.*

A British bow, and part of a paddle of an ancient British canoe, found in Burtle peat.

Three cases containing bronze celts, spear-heads, &c. ; bronze knives, torques, armlets, and rings (described in the Proceedings of the Society 1850, p. 91) ; flint spear-

heads, and a British stone ploughshare, all discovered in the Turbaries of Somersetshire.

A vase, Romano-British, from the Mounds of Burtle-moor.

Coin-moulds, Roman, from the Turbaries.

A buckle given by the Duke of Monmouth to a child at a house where the duke stopped to change horses after the battle of Sedgmoor; also a button from the duke's coat.

A telescope through which Mr. Wm. Sparke saw from Chedzoy tower the King's forces approaching Sedgmoor.

A long brass-barrelled pistol used at Sedgmoor, by Capt. Durston, and a blue glass drinking flask, 1613, in the form of a pocket-pistol, which belonged to him.

A dish of Persian ware, known as the Faversham dish, used by Lord Faversham in the house of Mr. Bridge, of Westonzoyland, the day before the battle of Sedgmoor.

A blood-measure or bleeding-dish of the same ware.

Powder-flask used at Sedgmoor, three bill-hooks and cannon-ball, found on the site of the battle.

A knife and a leaden tea-pot found in Burtle-moor.

Two Etruscan vases.

A case containing Egyptian and British antiquities.

*By Mr. EDWARD JEBOULT, Taunton.*

A Manuscript volume, in folio, containing Presentment of the Jury sworne att a Courte of Survey held at Taunton by an Ordinance of Parliament the 15 day of Dec. A.D. 1647, by the Surveyors appointed for the Sale of Bishoppes Lands: The Rentes of all the Lands (together with the Tenauntes names), within the Hundreds of Holway, Staple-grove, Poundisford, Nailesborne, and Hull: Copie of Courte Role, Regni Regis Caroli 23<sup>o</sup> A.D. 1647: A Customary of the Manor of Taunton and Taunton Deane, &c. pre-

sented to the Survivors appointed by an Ordinance of Parliament for abolishing Bishops and settling of their lands upon Trustees for the use of the Commonwealth in the year of our Lord God 1647 : A Particular of Fees due unto and taken by the Clerk of the Castle of Taunton.

A Manuscript quarto volume containing The Customs of the Manor of Taunton Deane : Reeves of Hull from 1659 to 1742.

A Manuscript quarto volume containing The Presentments of the Grand Jury at the Court Leet for the Manor of Taunton Deane, from Sept. 12, 1743 to Sept. 12, 1749.

A Manuscript octavo volume containing A Customary, 1647 : Clerk's Fees : An account of the Tenure of every Man's Estate in the Hundred of Nailsbourne : A List to Collect the Beedle-money, Tything-money and out Loade, A.D. 1761.

## ERRATA.

- Page 112, line 26, for posterioroly read posteriorly*  
 „ „ „ 29, *for then read than*  
 „ 120 „ 19, *for breecia read breccia*  
 „ 126 „ 8, *for 1 read 1'*  
 „ „ „ 14, *for prezygapophasis read prezygapophysis*  
 „ 128 „ 1, *for vertebræ read vertebra*  
 „ 132 „ 11, *for Pl, XI read Pl. II*  
 „ 137 „ 25, *for Francaises read Françaises*  
 „ 148 „ 20, *for symphasis read symphysis*

In the catalogue Pl. XXV stands for Pl. XXVI and Pl. XXVI for XXVII.



PROCEEDINGS  
OF THE  
SOMERSETSHIRE ARCHÆOLOGICAL AND  
NATURAL HISTORY SOCIETY.

1867, PART II.

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PAPERS, ETC.

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On the Rise of Bristol Trade.

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BY THE REV. WILLIAM HUNT, CONGRESBURY.

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EVERY reader of history, every one who takes the trouble to compare nation with nation will acknowledge that the things which make a people great and happy are their liberty and their trade; and these have oftener found their home in the Market place, the Exchange and the Guildhall, than in the Court, the Castle or the Camp. Born as I am of a family of Bristol burghers, and indebted to Bristol trade and enterprize, I feel especial pleasure in tracing their rise in this town. The first mention of Bristol with which we meet is in the reign of Cnut, one of his pennies, of which there are several slightly

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different varieties, being stamped with the name of this town. It therefore comes before us at once as a place of no small importance, and possibly owing much to the Danish rule. As at that time all the south and east of Ireland was held by the Northmen, or as they were then called Ostmen, Cnut no doubt felt the importance of so good and well situated a port for trade with that country. For the Northmen were not merely savage pirates, they sought for trade as well as plunder and their long sea-worthy ships served equally well for either purpose. Dublin, Cork, Waterford, and Limerick, towns still connected closely enough with Bristol were the seats of Danish rule and emporiums of Danish trade. It is in connection with these towns that the port of Bristol is first mentioned, and it was from trade with Ireland and with the Northmen in their own homes that the wealth of the city seems to have sprung. Before, as well as after the conquest, the way to Ireland was from hence, for Wales was of course an unconquered land. In 1051 the port was used for the first time, as far as we know, on an occasion of national importance. In the autumn of that year the hatred between the house of Godwine and the foreign party at the court of Eadward burst into a flame, the King sided with the Frenchmen, and the northern Earls, Leofric and Siward, glad of an opportunity of lessening their rival's almost unbounded power, and overthrowing the West Saxon influence in the council, marched to Gloucester with all the forces of the north. At a full meeting of the Witan at London, the whole family of Godwine were outlawed. Harold and his brother Leofwine fled to Bristol, part of the earldom of Gloucester which Swein held, and went on board a ship which Swein had got ready and victualled; and the King sent Ealdred the Bishop

of London to outride them before they got on board, but he either could not or would not, and they went thence out of Avon mouth and there met with such violent weather that they could scarce get away and were much damaged, and when the weather allowed they sailed away to Ireland, there they stayed with the Danish King at Dublin.

Once again Harold sailed from this port in 1063, when he went thence to make his famous and decisive campaign against the Welsh.

**1400910**

But Bristol ships sailed to Ireland on a far worse errand than to aid the escape of the patriot earl, or to carry him against the old enemies of his nation. Bristol was the market of the English slave trade, and it was from this shameful traffic that the prosperity of our town began. In Domesday Book the number of slaves is rather over 2500, nearly one eleventh of the whole population there reckoned. Of these many no doubt were the descendants of the conquered Welsh; for the strife between the two nations was carried on for centuries, sometimes by regular campaigns like that of 1063, always by a wasting border warfare, so that the slave population was constantly recruited. The nearness of this town to Wales, and its marches made it no doubt a convenient place for a traffic in captives. But the rest of the slaves were English, who had become so either because they or their forefathers had failed to pay the wergild, the fine for murder, or some other compensation for crime; or who had been taken in war; or who had sold themselves for bread in those times of famine which now and again wasted the land; or who had even been kidnapped by their fellow countrymen. All these could be bought and sold inside the island, the price of a slave being about four times as much as that of an ox. But heavy penalties were enacted against those who

sold their brethren to the heathen. The frequency of the laws against this practice would alone prove their powerlessness, and a Danish writer\* of the beginning of the 11th century tells us that the poorer English were kidnapped in great numbers by their fellow countrymen, and that even children in their cradles were sent off to foreign slavery. And he sees the vengeance of God carried out by his countrymen on a people guilty of so great a crime ; just as at the Council of Armagh an hundred and fifty years later, the Irish Bishops declared that the wrath of Heaven was shown by the just judgment of the conquest because Ireland was full of English slaves. William of Malmesbury tells us that Bristol became the great scene of this national crime because the direct course to Ireland was from thence, that the agents of the city went throughout the whole kingdom buying not only men, but even women, who after they had ministered to the pleasure of their masters, were sold when with child to be sent into foreign slavery. The royal revenue was increased by the sale of these unhappy beings, so that the merchants of Bristol could have found no difficulty in evading the law. At the earnest entreaty of Lanfranc, William interfered with this Irish slave trade, but he does not seem to have entirely stopped it. This good deed was done by Wlstan, the English Bishop of Worcester. For two or three months he preached every Sunday in the town, until at last men came to a better mind and gave up the crime. But one trader went on still in his wickedness, which so offended the new converts that they drove him out of the town and blinded him.

This trade between Bristol and Ireland probably determined the sons of Harold to land at this port in 1069. It

\* Lupi Sermo ad Anglos—Langebek, 1014.

was the most natural place for Irish ships to put in at, and for Irish sailors to expect a welcome. But the men of the burgh stood on their defence and beat off the invaders manfully.

The city was yet to have a closer and more remarkable connection with Ireland. Dermot, King of Leinster, being driven from his dominions, went to King Henry to get his help. The King, who was then in Aquitaine, had no leisure to engage in Irish enterprize, but gave Dermot authority to enlist his subjects in his cause. He then came to Bristol, where he lived for some time, being able in this way to keep up communication with his Irish friends; here he published the king's letters patent and stayed until he returned to Ireland early the next year, followed by Richard of Clare, and others. The success of the Earl of Pembroke roused the jealousy of King Henry, and he was forced in 1171 to return to England to appease him. There he engaged to give up Dublin and some other lands to the king. Thus the Irish capital became part of the king's demesne land, which he could grant to any one he chose. In 1172 he took possession of this new demesne, and at the close of that year, or the beginning of the next, he published a charter "granting the city to the men of Bristol to inhabit with the same liberties and free customs which the men of Bristol have at Bristol and throughout my whole land." This extraordinary charter is dated at Dublin and is still in the archives of that city. The effect of it was that several Bristol merchants settled there under the protection of Hugh de Lacy, and brought with them English municipal liberty and trade. A curious parallel to this grant is that given by James to the citizens of London, of vast possessions in the city and county of Derry, after the rebellion of O'Dogherty. In the reign of



John we find a petition from the burghers of Dublin, by whom is meant probably the Bristol men there settled, asking for the liberties granted to Bristol by King Henry and confirmed by John. The answer\* is given in an almost literal copy of the great charter granted to this city by John, while Earl of Gloucester, and in one clause especial reference is made to it. Thus we find a second Bristol on the other side of the channel, an Irish city with every sign of mercantile life, an oasis in that desert of rapine and misery. Nothing could have shown a more enlightened policy than this grant. When Edward III. established a colony in Calais he in like manner gave to his emigrated burghers their old municipal rights; and making allowance for the growth of these, the colonists of Calais were in much the same position as the Bristol colonists of Dublin. Henry V. in his scheme for colonizing Harfleur neglected this policy, and failed because he did so, the mistake was seen by his unfortunate son but it was too late to remedy it. The prosperity and happiness of an English burgher especially in such a town as Bristol depended on the liberty of trade, and he would have risked his all and often did so for the sake of it.

I have thus traced the connection between this city and Ireland for a century and an half from the first authentic mention of it in the reign of the Danish King, when possibly many Danes carried on trade here which may account for the fabled parentage of the celebrated Harding, to the time when it received its great charter from John, and sent out a colony to take possession of the capital of Ireland, or perhaps speaking more correctly enlarged itself by taking Dublin within its own limits. After this time there are

\* Published in the Report of the Commissioners of the Public Records of Ireland.

plenty of well-known instances of Bristol being used as the port for crossing over to Ireland, and though I have not been able to find many records of its trade with that country still we have enough to show that it certainly was carried on. The closeness of the connection is proved by an incident quoted by Mr. Seyer from two calendars in which under the year 1445 certain Irishmen are spoken of as having been made burghers of this city.

Meanwhile we find other signs of the growth of the city's wealth. The rent paid to the king according to the assessment of Domesday Book is unfortunately joined with that of the manor of Barton Regis, but that of the latter was probably not large. Both together they amounted to 110 marks of silver, which is equal to £73 6s. 8d.; to this must be added £28 paid to Gosfrith, Bishop of Coutance, Warden of the Castle, making altogether £101 6s. 8d. This was larger than the rent paid by any other town there mentioned, but from it must be deducted the annual value of the manor of Barton, and this we cannot settle on account of the great difference between the recorded values of lands even in the same district.

The trade of the city was not confined to Ireland. William of Malmesbury says that "the port of Bristol was full of ships not only from Ireland but from Norway and every part of Europe which brought thither much foreign wealth." The mention of Norway is noteworthy, for if my idea of an early Scandinavian connection is correct we have here a proof of its continuance. It reached its highest point in the 15th century under Canynges. The author of the *Gesta Stephani* gives a remarkable account of the commercial importance of the city, in his time the great stronghold of the empress. "Now Bristol is almost the richest of the cities of the land, and receives

by sailing vessels the wealth of neighbouring and far off countries. It stands in the most fruitful part of England, and is by nature the most defensible of all the cities of England." And he goes on to liken it to Brundisium, in that two rivers wash its sides which meet together where the land is defective and form a great quantity of water. This was the case at one of the old mouths of the Frome which formed the Marsh, on part of which Queen's Square now stands. And he further tells us that the strength of the tide caused the rivers to form an harbour which could hold a thousand ships in perfect safety. A town with so large a foreign trade could not have been without manufactures, and we have a curious notice of one of these in the time of Richard I.\* It comes in the old story of the sacrifice of a boy at the Jewish feast. In this case a Jew is represented as forwarding a French youth to his countrymen at Winchester, under pretence of mending his fortune but really to supply them with a victim. He warns him against the other cities of the kingdom, giving a special reason against each lest the boy should be tempted to go to any of them and so escape his fate, and he goes on to say "at Bristol there is no one who is not or has not been a soap maker," adding that that useful employment was much despised by the French, a curious forestalling of the never ending joke against that nation. A tradition of an early soap manufacture and trade with London in that article preserved in a MS. calendar, and quoted by Mr. Seyer is thus confirmed.

Before we go on to later times it would be well to say something of the way in which this trade was protected ; how a trading city such as we have seen Bristol to have been could ever have risen up ; how it could

\* Richard of Devizes.

have gone on with ever increasing wealth in spite of foreign conquest and of civil war. The secret lay in union for trade. In the times of which I am speaking the energy of single men could have done but little towards the defence of their trade or the liberty of their city. Each craft, trade, or mystery, was protected by its own union or "guild." All the members of a guild contributed towards the common fund, they all had a share in the common interest. Each guild was in fact a body corporate, capable of holding lands and other goods in common and having its own government and officers. At its head was the alderman or eldest guild brother, chosen by all the members alike. And there is I think no doubt but that some of the wards and aldermen of our cities point to the lands held by the old trade guilds, under the jurisdiction or "soc" of the head of the guild or alderman. But besides these, in every place of commercial importance the traders united together and formed a guild merchant. This existed along side of the guilds of the various trades, but was different from them in that it embraced them all. The members were joined by oath and by common interest, they formed a self governing body with their alderman at their head, chosen no doubt from the aldermen of the several guilds included in it. In this corporate body all municipal administration was vested, they were the burghers, the good men of the town. It was by this body that charter after charter was won or bought from the overlord, and it is to its existence that we owe our well defined municipal rights, and all those things which have ever made our English towns the homes of civil and religious liberty. The guild merchant of each town could make separate laws for itself, and as it included all the other guilds, it really made laws for the whole trading

town, and thus the Guildhall was then, as it is now, the centre of municipal life. I have found no mention of the merchant guild of Bristol, for I have not been able to make the search which I had hoped for among the records of the city. But we have the Guildhall here, as elsewhere, and in the charter of John it is granted that the burghers may have all their reasonable guilds, as well as, or better than they had in the time of Earl Robert, son of Henry I. Both these however, may point only to the existence of separate trade guilds. And it is I think just possible that as Bristol rose into importance within a comparatively shorter time before the conquest than many other of our towns, (for I put no faith in stories of earlier times resting on far more modern authority), that the reality of a guild merchant may have existed without the name. It is evident from the history of the town that the reality at least did exist, that is to say that the burghers were a corporate body in whom the government of the town and of its trade was vested. All merchant guilds endeavoured as far as possible to monopolize trade, and the stranger trader was for a long time as much an object of jealousy as stranger wheat has been till our own day. And this was not confined to foreigners but to every one who was foreign to the town and its merchant guild. For example, in this town\* no stranger was allowed to buy of a stranger, leather, corn, or wool, nor to stay in the town for the purpose of selling his goods for more than forty days ; he was not allowed to sell wine save on board his ship, nor cloth save at the fair. This spirit of exclusion was carried still further, for no person dwelling within the town was allowed to trade unless he were a member of the merchant guild. Each man on entering the society had to swear that he

\* See the Charter of John.



would obey its rules, and its alderman, the forerunner of the mayor, who was at its head. These rules of course varied in different cases but probably they sometimes pressed heavily on some of the members, just as some of the rules of our modern trade unions still do. For in the Laws\* of the Four Burghs of Scotland, of which the customs of the English boroughs† were the patterns. “No shoemaker, butcher, or dyer was allowed to belong to the guild if he worked with his own hands.” But in equality of position and closeness of union all inside the guild were “brethren.” The alderman or mayor of the guild differed in nothing from the youngest guild-brother, save that his age, his character, or his wealth had caused all his brethren to choose him for their head. The way in which this gradually became changed, the way in which an oligarchy arose and arrogated to itself the common right, the struggle against this abuse in our own town of Bristol and the final triumph of the few in the establishment of a Common Council, I had hoped would have been told by Mr. Green, of Stepney, a man far more versed in such matters than I am.

Beside this standing court of the alderman and his guild-brethren for the management of municipal affairs the burghers of Bristol like the men of London had their own Husting or Hundred Court for civil and criminal cases from time immemorial, a right confirmed to them by King John, and also their own Court Leet for the management of the police of the borough. They were thus entirely independent of the family of the Berkeleys, who unsuccessfully disputed these rights both by violence and law, in the reign of Edward III.

\* See *Leges Quatuor Burgorum* in the Acts of the Parliaments of Scotland.—*Lex xciv* “*de Gilda Mercatoria*.”

† Owing to the long residence of King David in England.

One of the greatest hindrances to trade in early times was the right of the lord to levy tolls on merchandise coming into, or passing through his demesne. No goods could be carried anywhere without some vexatious demand under the name of passage, pontage, lastage, or kaiage, made even when they were but taken from one part of the lordship to another. From these dues the men of Bristol were exempted by a charter of Henry II., as far as the king's own demesne lands were concerned, for he could not of course interfere with the rights of other lords ; this charter was no doubt granted to reward the city for its steady adherence to the cause of the empress, his mother. This important right was confirmed to them by John, indeed his reign forms a great era in the welfare of our city. From that time onwards the king became its immediate lord, and as the rights of the crown became defined in the great struggles of the 13th and 14th centuries, Bristol took a share in the noble strife and reaped its fitting reward in the enlargement of its liberty and trade. The most important question between the king and his towns, was of course the right of levying custom on merchandise by his own authority without the consent of Parliament. For a long time the king did this to the great damage of trade. It was declared illegal by the Confirmation of Charters in the 25th year of Edward I. but was still carried on whenever the king was strong enough to enforce it. The Tolsey Court presided over by a steward appointed by the crown, heard and determined all matters connected with the king's dues. Besides the ordinary and legal customs which belonged to the crown, there were many which were levied as occasion offered. We hear of two which seem to have been especially annoying to this city. The first was an illegal exaction of fresh fish for the use of the

Constable of the Castle from every boat which came into this port ; this was enforced by Edward I. who is said on most doubtful authority to have seized for a time the charter of the city on account of its obstinate resistance. The second was a toll called the cocket\* paid I think on the registration of wool before it was shipped. This afterwards became a legal demand, but was not so I think in the reign of Edward II., it was withheld† during the great insurrection in his reign, and was especially retained as part of the jurisdiction of the Tolsey Court by the charter of Edward III., which made this city a county by itself.‡ Besides these two Bristol, as well as the other towns of England, suffered from the taxes on wool, well named the evil toll, and the forced levies of Edward III's reign. But these evils could not outweigh the good which came to a king's town for *they* were illegal and ought to have been, and often were, withstood, while the good came more naturally, for instead of having to fight a long and uphill battle against the undefined exactions of abbot or baron, the king's towns had to pay a fixed rent (*firma burgi*) either to the crown or to those to whom it was given or farmed, all other payments unless voted by parliament being illegal and such as could only be enforced by the strong hand. The charter of King John therefore stands out in a striking manner in the history of the city, because as we have seen it confirmed several liberties granted to its trade ; it secured to the townsmen their own courts, and because it marks the time when the town became part of the king's demesne,§ a royal borough. From

\* Vid. 27 Edw. III. 2. 1.

† Rolls of Parl. 9 Edw. II.

‡ August 8th, 1373. 47 Edw. III.—Printed in Mr. Seyer's valuable collection.

§ By the marriage of John with Hawisa heiress of Earl Robert of Gloucester.

this time its foreign trade began to grow rapidly and its liberties became more and more settled and important in almost every reign. The immediate effect of this enlargement of its trading liberties was the making of the new dock by digging a new bed for the Frome. As this is told at some length by the learned and laborious Mr. Seyer, I will pass somewhat quickly over it. It was an undertaking which marks in the highest degree the wealth, the skill, and the large-mindedness of the burghers. The old course of the Frome seems to have crossed the end of Small Street and Corn Street, and to have flowed along the northern side of Baldwin Street, joining the Avon close by St. Nicholas Church. Here was the only quay of the town, along Bridge Street by St. Mary's Church, hence called St. Mary-le-port. Beside this main stream of the Frome, a branch flowed into the Avon through the Marsh, now Queen's Square. The burghers cut a new channel of great size, right through the Marsh, on the eastern side they made the new and present quay, having bought the land from the Church of St. Augustine, a fact preserved in the names St. Augustine's Parade, and St. Augustine's Back, while the rest was kept by the Church, and is still called Canons Marsh.

This enormous work is the best proof of the commercial prosperity of Bristol in the 13th century, it was one which no other town probably, except London, could have done. Beside this the bridge was built at the same time. Deeply interesting as the consequences were of thus joining Bristol and Redclive, the borough and the manor, leading probably to the creation of our county, they do not fall within my limits.

Let us turn to some of the particular trades carried on in this city. Of these the wine trade seems to have been

an important element in its prosperity. By the charter of John "no stranger was allowed to sell wine save on board his ship," a privilege also granted to London. This shows that importation had begun here, and that the burghers had the exclusive right of buying at the dock to sell again. In a talliage\* levied 2nd Henry III., ten tuns of wine are required from this city, and as there is no mention of wine in the talliage of 7 Richard I., or in any before as far as I know, I am inclined to date the rise of the trade from the reign of John. It was of course a consequence of the union of England and Aquitaine by the marriage of Henry II. During the reigns of the Edwards, we find several notices of this trade in the Rolls of the Exchequer and elsewhere, London,† Southampton, Boston, and Kingston upon Hull, shared the trade of Bordeaux with this city, and the ships of both sides were employed in it. The Gascon merchants were especially protected by a charter of Edward I., confirmed by his son and grandson, but nevertheless they had to meet the jealousy of our English traders, especially here and in London. This became so serious that‡ in 1338 they had to petition that an officer might be sent to these two cities to protect them, and that a royal proclamation might be made that these outrages should cease on pain of punishment, which was accordingly done. But foreign trade in wine and indeed of all kinds was subject to even worse interruptions than native jealousy. The long war of the 14th century, and the practice of piracy, must have more than outweighed any number of royal charters of protection. In the 11th and 12th years§ of Edward III., we find writs commanding

\* Madox Exchequer.

† Excheq. Rolls, 17 Edw. I. 18, and Rolls of Parl. 36 Edw. III., and Patent Rolls, 10 Edw. III., 2nd.

‡ Rolls of Parl. 8 Edw. III.

§ Excheq. Rolls.



that all the goods and persons of the French settled in or round Bristol should be seized. Although this probably did not extend to the merchants of Aquitaine, yet there is no reason for supposing that the carrying trade of wine was confined to them, and the very chance of such disasters, which happened pretty often, must have discouraged foreign merchants from settling here. Besides this the seas were made unsafe by privateers and pirates. In the year 1415\* a ship of Bristol belonging to one John Fisher, was seized by the Bretons, and plundered. The Bristol men immediately applied for leave to make reprisals but the matter fortunately seems to have been made up quietly. Nor were the men of our own city quite blameless in this matter. Mr. Seyer records three instances from the Rolls of Parliament of acts of Bristol piracy, one in the reign of Edward I, of the seizure of a Dutch ship; the second which was one of great audacity, was the seizure of a ship lying inside the harbour of Dublin, while the master was out of her engaged in paying the dock fees; the third lies at the door of Lord Thomas Berkeley, and was perhaps rather a manifestation of native jealousy than a private act of plunder. Henry IV. had granted to the Genoese the right of importing wine from Bordeaux into England, and of exporting wool. One of the ships belonging to Lord Thomas sailing to Bordeaux, fell in with a large Genoese carrack laden with wine and plundered her, restitution was ordered but the foreigner came worse off in the end. I have also found that in Edward II's. reign,† Bristol men set on an Italian ship carrying wine to Holland, and robbed her of £40. The matter was handed over to the Admiral of the Aquitaine fleet

\* Rolls. of Parl.—Seyer's Bristol c. xviii.

† Ab. Excheq. Pleas, 18 Ed. II., rot. 18.



and the offenders were punished. But in spite of these hindrances the trade of the city rapidly increased. The reign of Edward III was a period of general commercial progress, and in this our city had its full share. In the\* third and ninth years of this reign the right to work in and sell tin, one of the most jealously guarded privileges was extended to it by the Crown. But this was only a forerunner of a still more important privilege, viz:—the establishment here of the Staple. The chief articles of English produce were wool, woolfels, leather, and lead, they were the chief source of our wealth and the staple of our commerce. The laws† which were passed to further their sale form one of the most important steps in the great change which delivered England from the dominion of feudalism and aristocracy and made it the stronghold of liberty and trade. For trading debts were the first which were allowed to be charged upon real estate, and gave therefore the earliest and most decisive blow to the feudal restraint on alienation.

The English wool was held to be the finest in the world, and as late as the middle of the 15th century it was forbidden to adulterate it even in Spain. It was exported to Flanders, the great market of the West, there it was spun by the countless looms of Bruges and Ghent, and thence was carried by the ships of the Baltic and the Rhine, to clothe every nation‡ of the world. The first mention§ which I have found of Bristol being engaged in this trade is in the 2nd year of Henry III. During the two next reigns the wool trade of Bristol is occasionally

\* Cal. of Patent Rolls, 3 & 9 Ed. III.

† 27 Ed. III., c. 9, Stat. Staple. 13 Ed. I. de Mercatoribus, vid. Stephens' Blackstone, Bk. II, c. 6.

‡ Mat. Westminster.

§ Cal. of Patent Rolls, 2 Henry III, pt. 1.

mentioned, but it seems to have followed the varied fortunes of that of the rest of England. But in the reign of Edward III it received an important though artificial encouragement. As wool was the chief source of the country's wealth, it was also of course made the chief subject of taxation, and for this reason its sale was regulated by Edward III. In his 27th year he fixed the market for the staple commodities at ten English towns of which Bristol was one, at Caermarthen for Wales, and at Dublin, Cork, Waterford, and Drogheda, for Ireland, at these towns only the staple commodities might be sold from one merchant to another, there they were weighed and registered, and the custom paid on them to the crown. They were then shipped by alien merchants for such of the privileged towns as were on the sea and from certain ports appointed for the others. No native was allowed to export them in order I think to make sure that all the money which they sold for should be brought into England, for the idea that money is in itself the wealth of a country has lasted almost to the present day. At the head of the staple in each town was an officer called the mayor of the staple, assisted by two constables, to enforce the customs and regulations of sale, and to determine all offences connected with the staple. These officers were chosen by the whole body of merchants trading at the staple, foreigners as well as natives, they were independent of the king's justice, and the mayor, sheriffs, and bailiffs were bound "to attend upon them to carry out the execution of their commandments on pain of grievous forfeiture." Thus then, we find a trading community independent of, and almost overshadowing, the community of the borough, as we saw before the borough community existing only in the merchant guild. Indeed the old guild merchant seemed almost

likely to have lived again in the commonalty of the merchants of the staple. As in older times the mayor or alderman of the guild was chosen by every member, so the mayor of the staple was chosen by the vote of all the members under his jurisdiction, to him and to his officers as to the alderman of the guild was entrusted the cognizance of civil suits, and lastly, both bodies had a common fund raised by the payment of every member of the brotherhood, and after the common expenses were paid out of it, the rest remained the property of each and all. But the borough government was fortunately too well established to be shaken.

The wealth gained by the export of wool did not prevent home manufacture. Cloth was made in England as early as the reign of Henry II\* but it was not a general article of manufacture, and was for the most part confined to the coarser yarn. It was not till the reign of Edward III that this craft became really important. This king, well called the father of English commerce, to whom our city owes so much, invited over Flemish workmen who settled in the country and taught the manufacture of the finer woollen cloth. The narrow spirit of trade corporations was of course a great hindrance to this plan. In the eleventh† year of his reign he put forth a repeated grant of protection to the new comers, and in the same year to ensure the prosperity of their adventure the importation of foreign made cloth and the exportation of wool was forbidden by Act of Parliament. Encouraged by this artificial stimulus, Thomas Blanket and other burghers of Bristol set up cloth machines in their own houses and hired workmen to help them. The mayor and bailiffs of the city

\* Hallam's Middle Ages, c. ix., pt. 2.

† Cal. of Patent Rolls.

exacted money from them and troubled them in other ways. The aggrieved parties appealed to the king, who issued an ordinance\* for their protection. These new manufacturers were unpopular probably because they were carrying on a handicraft without belonging to any guild, and were therefore exempted from guild restrictions and payments. But in spite of such opposition the manufacture of cloth seems to have flourished here, for before the end of the same reign the city of Bath complained that the men of Bristol had set up a cloth market at the same time as their own which much damaged them. At the same time the spinning of coarse woollen yarn was still kept up by the poor, and a complaint was made in the last year of Edward III from Bristol and other western counties that labourers could not be had at hay-time and harvest on account of their being thus employed. As the manufacture of cloth became general in the city, the dyers rose with importance, and accordingly their guild here received a charter† in the reign of Henry IV which was confirmed to them by his son and grandson. Such was the growth of Bristol trade in the reign of Edward III, and thus we can easily see the reason of the bold and haughty bearing of the burghers, breaking out now and then into open tumult, once assuming something very like sovereign state, and of their manful resistance to the Berkeley family, which was finally settled by the creation of our city into a county by itself independent of all jurisdiction from without.

A privilege of the like kind was afterwards granted to this city by sea. Mr. Seyer says that there is a copy of a charter of Henry IV exempting Bristol from the jurisdiction of the Admiralty Court, I have not as yet been able

\* Rymer's *Fœdera*, 1339, De instrumentis, &c.

† Cal. of Patent Rolls, 13 Henry IV. 2.

to find it. But be this as it may, there is a charter of Edward IV which grants this privilege to the city. All admiralty cases which included contracts made on voyages were for the future to be tried by persons named in a special royal commission, which was to include the mayor and recorder of the city. The immense benefit which this was to trade can easily be imagined. We may indeed consider this as the third great era in the commercial history of our city, if we take the reigns of John and Edward III as the two first. For at this time lived William Canynges, "the richest and wisest of merchants," the princely benefactor of the Church of St. Mary Redcliffe, and five times mayor of the city. His chief trade was in the Baltic, and he carried it on with ships of unusual size, the most famous of which were\* the St. Mary and St. John, of 900, and the St. Mary Redclyffe, of 500 tons. His great wealth was no doubt partly inherited, but he had beside regular success in trade a monopoly of great value. In 1450† an agreement was made between Henry VI and Christian, King of Denmark, that no Englishman should trade to Iceland, Friesland, and Heligoland, but soon after we find that in consideration of good service done by William Canynges, while mayor, and of debts due to him by many, the king granted him leave to trade with those lands for fish, in ships of any burden, and with any merchandise, save that which belonged to the staple.

The family of the Canynges is one of which a great commercial city may well be proud, and the great Baltic trader was not the least worthy of the name. He lived and traded here as an honest and adventurous man in his generation, at the evening of his life he sought the quiet

\* Macpherson, p. 667.

† Rymer's *Fœdera*, XI. 1450.



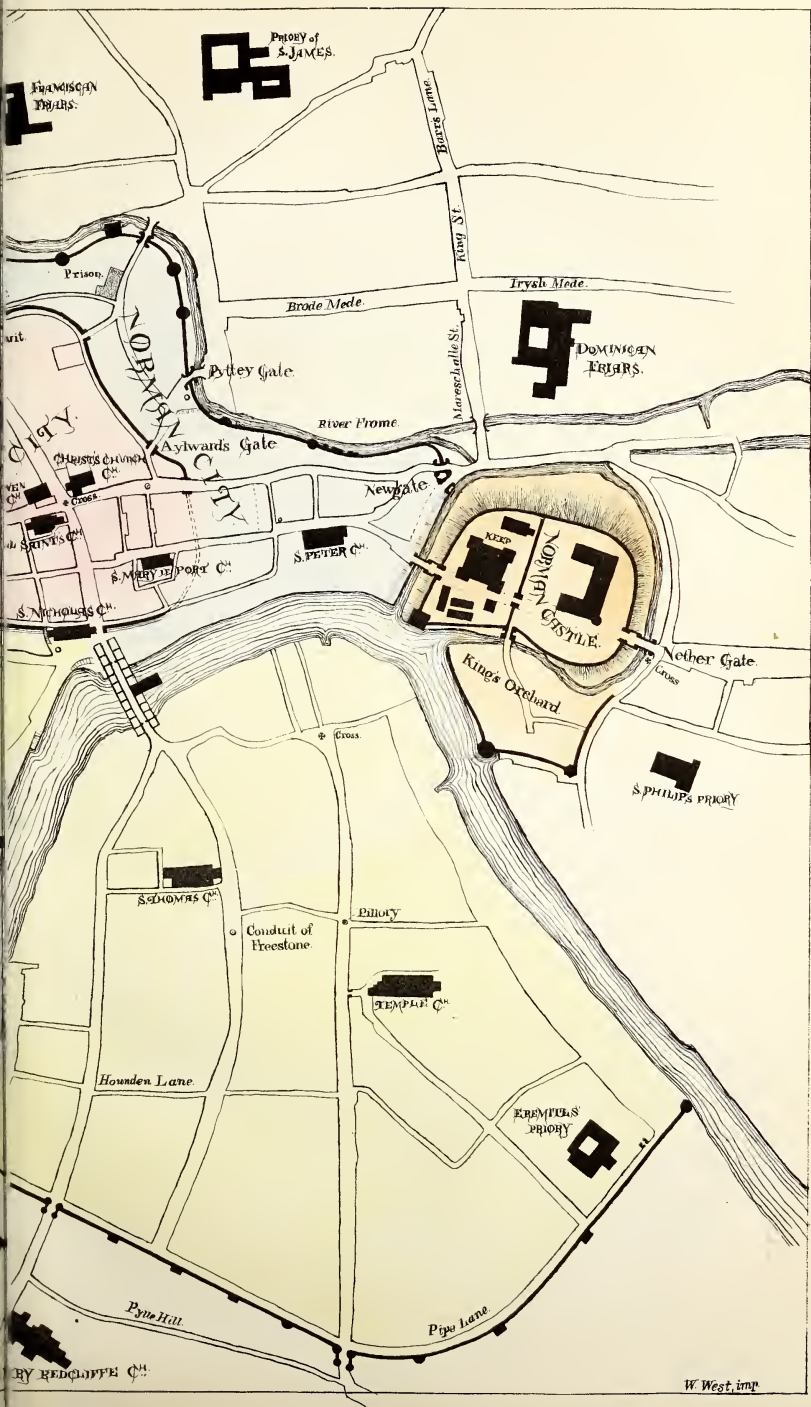
enjoyment of communion with his God whom he had served so well, and now rests in peace within the lovely Church of St. Mary, the fitting monument of his stintless devotion.

In his time there was born in this city of alien parents the great explorer Sebastian Cabot, discoverer of Newfoundland and Florida, who in 1497 sailed from this port with ships fitted out by Bristol merchants to land for the first time on the mainland of a new world. And here on the dawning of a new day in the world's history, with so many old things passed away for ever, and so many new sources of wealth and adventure lying ready for our city, I end my sketch. We have traced through, but very imperfectly, the rise of the trade of the city, from its small beginnings in the eleventh century as the slave port for Ireland, through the great epochs of the reigns of John and Edward III on to the close of the 15th century, when possessed of every privilege which an English city could have, Bristol is stretching forth her hands after a new world and new fields for trade. And looking back on the history of such a town, one may well feel thankful to the great ruler of events that our English trading cities, unlike the cities of the Empire, never obtained sovereign rank, but have ever remained parts of one great whole, that their wealth has been the wealth of all, that their liberty of trade and restlessness of action have not been confined within themselves, but have ever been the lively centres of political and commercial welfare throughout the land.

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# On Ancient Bristol.

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BY E. W. GODWIN, F.S.A.

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**T**OWNS may be divided into four classes :—

- 1.—The Military.
- 2.—Baronial.
- 3.—Ecclesiastical.
- 4.—Commercial.

Roman towns belong to the first. They occupy important stations on the great highways, and are planned at right angles, having a gate in the centre of each face, and sometimes a tower at each angle. Chester and Lincoln are examples of military cities.

The Baronial towns or castles were the great nest of Feudalism. The houses and streets were formed under the protection of the castle, sometimes within the walls of the great court, but more often in England nestling under the shadow of the castle walls, as at Norwich, Richmond, in Yorkshire, &c.

The Ecclesiastical towns were to the bishops and the abbots just what the castle towns were to the barons. The powerful churchmen of the middle ages were often more

than a match for the temporal lords, and thus we find the traders and labourers clustering their little tenements at the base of the towering abbey, with as much confidence as those who dwelt under less spiritual protection. Examples of this may be seen at Bury St. Edmunds, Wells, and Glastonbury.

But the great towns of the middle ages belonged to what may be called the Commercial class. These were mostly seaport towns, self-dependant, self-contained, and self-governed. They exercised in the end the greatest influence, because they were the greatest workers in the state.

Though the Roman military cities have sank into quiet villages or small country towns, and baronial halls into cowsheds and blacksmiths' forges, and the great monasteries shared the same fate, the commercial cities have lived and flourished and extended their walls, and spread out far beyond their ancient limits. Thus Bristol has grown to ten times its original compass in Saxon times. Its original site was between St. Nicholas' Church, south; St. John's, north; St. Peter's, east; and Stuckey's Bank, west.

These points give the extent of the first walled Saxon town. Bristol was therefore in Saxon times of no mean importance, but the remains of the Saxon city are all passed away except the direction of the streets, and perhaps a few portions of the walls. The aspect of it would then be a crenellated wall following an irregular curve, with towers north, south, east, and west, and three smaller ones on the north side. Entering the town we should find a street leading from each gate to the centre of the town. Wine Street, or Wynch Street, from the east, High Street from the south, Broad Street from the north, and Corn Street from the west. Inside the wall from gate to gate

was a lane or way, which communicated with one of the main streets, viz : Corn Street by Small Street, which is almost parallel to Broad Street, and at the end of which was a gate tower.

Four centuries later than Saxon times, great changes had taken place in the appearance of the town.

The Normans had reared a mighty fortress nearly as large in area as the old town, occupying the neck of ground between the river Frome and the river Avon, and extending the whole length of Castle Street, leaving a space the length of Peter Street between it and the town wall. The inmates of the two fortified areas did not live on amicable terms. The garrison at the castle seems to have unjustly interfered with the townsmen, levied tolls, and captured their goods, so that the burgesses were constantly applying for charters of protection. From the concluding words of a charter of King John, we may believe that the first extension of the town walls took place soon after A.D. 1188. The space between the old town wall and the river Frome, north, and the ground lying between the town and the castle, east, being taken in by the new wall. The town thus became possessed of a double line of fortification on its weakest side. The new gate towards the castle was erected close by the castle mill, and to this day two or three of the houses in Castle-mill Street are known by the expression of "under new gate." Then followed an extension southwards towards the "marsh," as Queen's Square and its neighbourhood were then called.

In 1247 Bristol Bridge was built, where before was only a passage ferry, and the first step was taken to incorporate the lordship of Redcliffe with Bristol, by a charter of this date, and a new wall and gates were built in the line of Port Wall Lane. In 1347 Edward III granted liberty to

erect a prison ; in 1373 came the important charter which made Bristol a county by itself, and granted two members to represent it in Parliament. In the same charter is contained the foundation of the municipal chamber "the forty better and more honest men of the town."

Coming to the time of Wyrcestre, A.D. 1450, we find that in the past four hundred years the town had more than quadrupled itself, and the extension of the town was southward so as to secure all the advantages of the two rivers, and enable the ships to ride up to the doors of the warehouses, and under the windows of the merchants' homes.

Before Edward I had ascended the throne, a continuous chain of religious houses stretched from beyond new gate, or the east gate of the town, all along the north and west banks of the Frome, to the west of the marshes at the confluence of the two rivers. Nor did they end here, for behind and above these, to the north, rose the nunnery of St. Mary Magdalene, and the tower of St. Michael, whilst to the west stood the chapel-crowned hill of St. Brendan. In the middle of the 15th century, when Wyrcestre wrote, there were in the city two powers which were in their full blossom, viz :—money, and a mania for building. To these are owing such works as the Church of St. Mary Redcliffe, and the Towers of St. Werburgh and St. Stephen, and to these we are indebted for destroying the less showy, but more lovely works of the purest period of European art, nevertheless there is happily enough left to enable us to judge of every style and period.

To return now to the growth and extension of the city. In the Saxon city there were seven TOWERS over the gates of the inner wall, two, if not three, church towers in the centre, and four others, making fourteen within the inner

wall. In the outer town or Norman city were three church towers, the Bridge tower, 108 ft. high, the Custom House tower, Canynge's tower, one Convent tower, and nine over the gates, besides these were twenty-three upon the walls, some square, some round, some used as dwelling-houses by the merchants or "good men" of the town, all of which measured between 20 and 30 ft. in diameter. Outside the town the spire of Redcliffe was balanced by the spire of the Carmelites, each 200 ft. high, the seven towers of the Castle bounded the view eastward, as the four towers of the Abbey bounded it westward, and between these the campanili and gate-towers of seven conventual houses, rose like a phalanx under the leadership of the tower of St. Michael the Archangel. Seventy-nine or eighty towers is no slight thing for a city to boast of, without counting the innumerable turrets which filled up the spare corners.

Next to the towers as important features in the general view, were the lines of crenellated WALL, one above the other, and over both the frowning merlons of the castle. One of the city walls contained in its thickness five fair sized parish churches.

There was no less than nineteen parish CHURCHES two of which were attached to convents, all the four orders of friars, five priories, a nunnery, and a mitred abbey.

There were two HOSPITALS for lepers, and another hospital in the suburbs, besides seven almshouses, &c., four guild chapels, besides the chapel of St. Mary, on the bridge, and the mariner's chapel of St. John, on the Back.

It is almost impossible to enumerate the examples of DOMESTIC ARCHITECTURE which the town possessed in the middle of the 15th century. Every house was a study. Among the more important may be mentioned the Guild-hall, in Broad Street; the Merchants' Hall, or Spicer's



Hall, at the back of the Custom House; Shipward's House, near St. Stephen's Church; Norton's House, now St. Peter's Hospital; Richard Newton's House; Canynge's House, in Redcliffe Street; the great houses in the shambles, besides one hundred and sixty or one hundred and seventy street houses which must have played important parts in the street architecture of the old town.

**THE CROSSES AND THE FOUNTAINS.**—The principal crosses were the High Cross in the centre of the town; St. Nicholas' Cross in Baldwyne Street; St. John's Cross, in Christmas Street; St. Peter's Cross; Stallage Cross, at the junction of Touker Street and Temple Street; one in the old market by the castle wall, and one at the top of Steep Street. Close by the last-named cross was a fountain or well, and there were also others at the Pittey Gate, the old Custom House, near Christmas Street, and at the corner of St. Peter Street.

**THE CONDUITS** of the town which seem to have attracted so much attention from Wyreestre because they were all of freestone, roof and walls, inside and out, were situated at St. John's Church, All Saints' Church, St. Nicholas' Church, St. James's Churchyard Gate, Pyttey Gate, and Thomas Street.

This is what there was in 1450, since that period four churches have been destroyed, five rebuilt, fourteen out of fifteen gate-towers have been destroyed, all the gate-ways except two, and between twenty and thirty wall-towers. Sad havoc has been made of the domestic buildings, and nearly of all the Conventual Houses; all the purely Conventual Churches have been demolished, except the Priory Church of St. Mark, and a moiety of the Abbey Church, and every vestige of the bridge and its chapel and its tower, and the Guild-hall and its chapel of St. George,

the Tolsey, and a host of minor buildings. Yet enough remains to illustrate the history of our national art. Thus of Norman work we have in the inner town two bays of the parish Church of All Saints, and portions of a house now the Mirror Office in Small Street. In the outer town there is probably no Norman work, but beyond the walls there is the grand nave of the Church of St. James, the font in St. Philip's Church, and the rich remnants of Fitzhardinge's Abbey of St. Augustine. The only Early English work within the town is an arch of the old town-gate, called Blynd Gate, at the end of St. John Street. Outside the walls we have a splendid series of examples of 13th century work. The finest specimen is at Redcliffe Church; then follow the beautiful tower of St. Philip; part of the priory of Dominican Friars, Merchant Street; some remains of the castle in Tower Street; the unique gateway of St. Bartholomew's Priory near Christmas or Whitesmith Street; the remarkably elegant chapel of the priory of St. Mark, now the Mayor's chapel; and the well-preserved and valuable examples at the quondam abbey of St. Augustine.

The Decorated work within the inner wall is confined to the vaults and cellars of the merchants' houses in High Street, and Corn Street. In the outer town we have the north chapel of Temple Church, and some bits in St. Stephen's Church, and also some timber construction opposite St. Peter's Church. Outside the walls Decorated portions remain of the priory of Dominicans; of the priory of the Franciscans, in Lewin's Mead; of the priory church of St. Mark; of the great work of Abbot Knowles at the Abbey of St. Augustine; and last of all the unique hexagonal porch and other remains at St. Mary Redcliffe. Of genuine Perpendicular, up to the 16th century, examples

within the inner town are to be seen in the crypt of St. Nicholas, at St. John's, and at All Saint's. St. Werburgh and St. Mary-le-port, have been much pulled about, but they are also worth noticing.

The Mirror Office in Small Street, and portions of the old Swan Inn, commonly known as the "Guard House Passage," are noteworthy specimens of the Domestic architecture. In the outer town, Temple Street, and Redcliffe Street, possess many houses of this period. Canynge's House is a celebrated example, also Norton's House, and St. Peter's Church, close by; an alms house in the old market; an alms house chapel at the top of Steep Street; portions of the Churches of St. Philip and St. James; the lofty tower of St. Stephen, and great part of the church; the whole of St. Augustine's Church, and some part of the Abbey of St. Augustine, and Priory of St. Mark; the Church and Tower of the Holy Cross or Temple; and nearly the whole of St. Mary, at Redcliffe.

### Aspect of the Inner Town at the time of Wyke's Survey.

WALL.—This originally erected for defence, and strengthened at various times, had grown to little less than 30 ft. in thickness at the base. On the exterior some few feet were occupied by set-offs, and a general inclination to the crenellated summit; inside the battlements, which were about 2 ft. thick, was a promenade for the townfolks of about 6 ft., and crowded on the remaining thickness and round about its external base were tenements and vaults of various kinds.

This wall was pierced in nine different points:—

1. St. Nicholas Gate, by Bristol Bridge, at the bottom of High Street.

2. Going westward, a Way down thirty-two steps, at the Back.

3. Another Way of thirty-two steps to Baldwyn Street, opposite Bafft or Back Street.

4. St. Leonard's Gate, at the bottom of Corn Street.

5. St. Giles's Gate, at the bottom of Small Street.

6. St. John's Arch.

7. Blynd Gate, at the end of John Street.

8. Aylward's Gate at the top of the Pyttey, often confounded with the Pyttey Gate at the bottom of the Pyttey.

9. The Old Gate, at the end of Wine Street.

Apart from their different dates, these nine gates belonged to two different classes, and in St. John's and Blynd Gate we possess types of the others. For the sake of distinction they may be divided into Town gates and Way gates.

To the first class belong the five gates which stood at the ends of the principal streets. To the second belong the four which led from the narrow lane or way within the wall to the Avon River on the one side, and the Frome on the other. Four out of the nine gates were always mentioned by the names of saints, these were town gates; the fifth town gate which stood a little to the east of the pillory, in Wine Street, is described as the "old gate" in contradistinction to the "new gate" built much further eastward on the first enlargement of the town in the 12th century. As St. Peter's Church is outside the old gate, and just within the new gate, it is just possible that the eastern entrance to the town might have been called St. Peter's Gate; accepting this hypothesis, we have five town

gates bearing the names of as many churches, which we find were at some time attached to them.

The question is, What time? Some evidence may be brought to prove that it was in Saxon times.

1. There is no example or record of any Norman town wall or town gates having churches on them.

2. Wyrcestre describes the church over the gate at the end of Small Street, as "the old Church of St. Gylys." At another place he says, "it is situated in the high place at the end of Small Street, over the gate, but the parish was united to St. Laurence or St. Leonard about the time of Edward III," and then he goes on to describe how the Jews' temple, (*Templum Judeorum*) or synagogue, used to be in the old crypt under the church, and how this desecrated temple was in his time used as cellarage. Now as the Jews retired from England in the reign of John, St. Giles's Church, desecrated and disused as Wyrcestre saw it, must at any rate have dated from a period anterior to the 13th century, but during the preceding century and a half the Norman fashion prevailed, and we are thus driven to one of two conclusions, either that this church was built in opposition to the Norman military fashion of the day, or that it had been built before the Normans' arrival, while yet the Saxon customs prevailed.

3. In the Anglo Saxon paraphrase of the book of Genesis, a MS. of the 10th century, preserved in the Bodleian Library at Oxford, one of the chief illuminations shows how the rebel archangel "began to be presumptuous." The archangel appears in the centre crowned, and bearing in his left hand a sceptre; this hand is extended towards two crowds of angels on his left, whose attention he seems desirous to draw to the great step he is about to take,



which is none other than to seat himself on the throne of Heaven. This throne of judgment is nothing more than a city gateway of two stories, the upper one with open arches forming a kind of canopy to the seat or throne. The roof is of a high pitch and covered with shingles, and on the ridge is seen a crowd of angels; at the angles are square towers or turrets of four stories, divided into two main stages which terminate just below the eaves of the roof, and between these turrets on the ground level is an arched gateway with two small windows over it, and a low turret on one side rising to the floor of the second story. This evidence taken altogether is favourable to the theory that the churches at the gates are of the same Saxon origin as the gates themselves.

Of the four remaining gates, the two for Nicholas Street are nameless, and it is not apparent that they were ever anything more than mere stair-ways, not so, however, the other pair on the opposite side of the town. The names Aylward's Gate, and Blynd Gate, at once remind us of Saxon times; and the meadow land over which they looked, and which stretched from Broad Meadow under the wall far up the banks of the Frome to the Eorl's Meadow, or from Broad Mead to Earl's Mead, explains the reason of the extra gate on this side of the town. All these gates with one exception had been rebuilt before Wyrcestre's time. Blynd gate was rebuilt in the 13th century, as appears from architectural evidence.

We will now proceed to survey the WAYS or STREETS.

With the exception of Bridge Street, the present streets or lanes are very much the same as they have always been. There have been no alterations in the various directions of the streets, and very few changes even in their border lines.

Entering the town by New Gate, we pass directly through Wine Street to our starting point the Old Gate, about one hundred feet to the east of the pillory or the present pump. This street is one of the four great streets of the town which meet at the centre where the High Cross stood.

It appears to have gone by different names at different times, Tower Street, Castle Street, and finally Wynch Street, corrupted into Wine Street. Where the pump now stands stood the pillory, or as Wyrcestre calls it, "*Domus justiciæ et Officii Collistrigii*," and says "it was round and constructed of wrought stone with arched and iron-banded windows, and that above the house was an instrument of wood for stretching the necks of infamous men, cheating bakers," &c.

Close by the pillory to the north is the short street called Aylward's Street, leading to Aylward's Gate, at which point commences the way or lane that encircles the town, under the shelter of the wall. This way, at no point more than ten feet wide, and in some parts only six feet, was called by the names of the different buildings it passed by. From Wynch Street to the bottom of Broad Street it was, and is still called Tower Street, or Tower Lane, possibly from the four gate towers being so very near one another. In this Tower Lane we have Blynd Gate opposite St. John's Churchyard.

St. John's Church and Gate were rebuilt by one of the Walter Framptons. Here was what Wyrcestre calls the "*Domus de frestone*" on the south side of the church for conducting water through lead pipes, which was rebuilt at a later period, and taken down in recent times. St. John's Arch and Church remain in much the same general condition as in Wyrcestre's day. There is also the crypt

dedicated to the Holy Cross, six windows to the north, two on the south, "frette vowted." The tomb of the refounder is still (I believe) in the crypt, also the gateway and the tower, "cum duobus batillementis," which gate is "Scita contingue Ecclesiæ Laurencii," and this expression settles the position of the Church of St. Laurence, of which there are some slight remains.

Crossing Broad Street, we enter Laurence Lane, which was the most ecclesiastical street for its size, being only two hundred feet long, and having the Church of St. Laurence at one end, and the Church of St Giles at the other, (according to Barrett) and the Nunnery of St. Sepulchre between the two. The parish of St Laurence was incorporated with St. John in 1580, and the site of the church sold for building.

The Church and Gate of St. Giles stood at the bottom of Small Street. Wyrcestre says, "hereabout the wall was higher than anywhere else, and had great vowtes under it," "that the old Church of St. Gylys was byldyd ovyr the vowtes." It was, however, only the fabric of a church, as the parish had been united to St. Leonard's about the time of Edward III.

The original course of the Frome before 1247, wound round the town in the line of Baldwyn Street, and joined the Avon just below St. Nicholas' Church. Then the ships could only come to the back, where, although there was enough water at high tide, the bottom was "very stony" and rough; but the trench cut in 1247 for the new course of the Frome turned out soft and muddy, so that it became a port for the great ships; the logs, the smaller craft, the barges, the lighters, &c., going as of old, up the Avon. This is the key note to the character of this quarter of the town, hither came all the heaviest of the mediæval mer-

chantmen. Here too, were built those towering craft which made Bristol famous as a seaport town, and put Burton's ship, the "Nicholas of the Tower," at the head of the English fleet of 1442.

Here also was the Custom House. Crossing Small Street, you enter St. Leonard's Lane ; on or against this portion of the wall some of the greatest merchants lived, at the other end of the lane was the Great West Gate of the town, with the Church and Tower of St. Leonard above it ; this was a Compound Gate. "The Parish Church of St. Leonard," says Wyrcestre, "is situated *supra portam*, S. Leonardi cum turri *desuper portam*" for bells ; but the little Church is situated between Baldwyn Street and the way going to the quay, (Pylle Street). This is explained by the dimensions of the Church ; the length of the nave 36 feet, choir 21 feet, width 30 feet, so that the nave was altogether westward of the town wall and the gate, having its north and south walls over the side gates leading to Baldwyn Street and Pylle Street, and its west wall towards the back of the house in Marsh Street ; the chancel was over the gate, forming a story of the tower, which is described as 65 feet high, with pinnacles and battlements. This church was taken down in 1771. The only way into the church was by a flight of thirteen steps on the north side of the chancel, beneath which was a small crypt.

Crossing Corn Street, we enter St. Nicholas Street or Collas Street. There were twelve vaults or cellars in this street, but its great feature was the church from which it took its name. St. Nicholas' Church and Gate must have been by far the handsomest building on the wall. The church appears to have been rebuilt at least four times. We find a church here in the time of Robert Fitzhardinge, which must have been either a Norman rebuilding, or a

Saxon structure ; if the latter, it must have been rebuilt before 1480, for the foundation, from Wyrcestre's description, would not apply to a Saxon building. He says, the parish Church of St. Nicholas is situated "supra portam pulchram," called St. Collas Gate, with a tower 15 feet square, supporting a large pinnacle or spire of wood covered with lead; and there were also most beautiful arches and windows, with a Chapel dedicated to the Holy Cross.

In 1503, or just before the Reformation, the church was again in part rebuilt, and finally, in 1762. The present crypt of two aisles is the crypt that delighted Wyrcestre with its beautiful stone arches and groins. The present church covers the whole of the crypt, as did also the church of 1503, but before that date the church only covered the north aisle of the crypt, and the tower was at the west end ; the chancel, as at St. Leonard's, was over the gate, 15 feet being the width common to the three divisions of the building.

The width of High Street is much the same as in old time ; under Mr. Leonard's shop are still to be seen one of these vaulted cellars which formed the only warehouses of mediæval Bristol. At the centre of the street meet two cross ways, one going east to Mary-le-port Church, and so on to St. Peter's Church, and the other west to All Saints' Lane.

The name of St. Mary of the Port almost explains itself. There, before the Frome haven was made in 1247, came all the ships trading to and from Bristol, and from the street the churchyard lane led to the shambles, and so down by a slip to the Avon. The church which occupies the site of a Twelfth Century or even earlier building, is a very poor example of late Perpendicular work. In Mary-



port Street were fifteen vaulted cellars and two passages into Wine Street, one called a "through house" passage, near Haddon's Tannery, and the other at the Swan Inn now Guard House Passage, so called perhaps because opposite the "*Domus officii*," or Pillory. Through the latter we pass to Wine Street. The rich Fifteenth Century gate-way of this passage is of the same pannelled character as the chancel aisle in St. Philip's Church.

Wyrcestre counted fifty-one cellars in Wine Street. St. Ewen's Church has been swept away to make room for the present Council House. The High Cross has been carried to Stourhead. Christ Church has been rebuilt in a bad Pagan style, from which All Saints' is not free. These three churches are all mentioned in deeds as early as the 12th century ; but there is every reason to believe that Christ Church was of Saxon origin, and there is no reason to conclude that the other two were not of an equally old foundation. Wyrcestre's notices of St. Ewen are short, but satisfactory, it consisted of nave and chancel and a side aisle, which was dedicated to St. John Baptist, and belonged to a great guild or fraternity. This aisle was probably the entire length of the church, and was erected for the fraternity of Merchant Tailors by two burghers (John Thorp and John Sharp), 1398.

The Tolsey, or old Council House, appears to have stood considerably in advance of this chapel to the east and south. Wyrcestre's notices are very interesting. From them we learn that the space over the Tolsey (*ubi major et conciliarii Villæ obviant de die in diem, quando videtur expediens*), was covered with a flat roof of lead. The side opposite Christ Church measured fifteen feet, but the measurement of the other side, "*coram High Strete*," is not given. This was a covered court very like an open

porch. The Council House proper,—the “*officium domus*,” was attached to the chapel, and near, if not adjoining, the west end of this porch or “Tolsey Court,” as it was called. The Council Chamber was on the upper floor and covered by an arched or vaulted roof, and the flat lead roof of the porch or “Tolsylle Court,” served as a balcony to the Council Room. Since Wyrcestre’s day, two, if not three, great changes have taken place. Barrett says that in 1551 the chapel of the fraternity of Merchant Tailors was granted to the mayor and commonalty of the town. In 1704 the Council House was rebuilt. Towards the close of the 18th century the parish of St. Ewen was united to Christ Church, in 1827 the old church was taken down, and the late Professor Cockerell was employed to build the present structure—no vestige of the old work remains.

Christ Church most probably had a Saxon origin, and here lodged the society of Calendars before their removal to All Saints’ Church, a society which is spoken of in the very dawn of the 13th century as “*antiquatem*.” Wyrcestre, whose uncle was a Calendar Brother, describes the order as founded about the year 700, and Leland says “the original was owt of moynde.” Wyrcestre describes the church, which had a square bell tower and a lofty well-built spire of freestone. The length of the church was the same as that of St. Ewen, viz. :—66 feet, and the width between 50 and 60 feet. It was a cross church, the height of the tower about 70 feet, and to the top of the spire 140 feet.

The skeleton of All Saints’ Church is still seen much as in Wyrcestre’s days ; but of the rich fittings, the paintings, the hangings, which crowded the church of the Kalendars

we know nothing beyond the mere record of them found in wills and inventories. The length which Wyrcestre gives, viz. 69 feet, is exactly the length from the east end to where the Norman work at the west joins the Perpendicular work. Here therefore it is possible that a screen existed cutting off the low Norman portion as a porch, or for the special use of the Calendar Brethren.

The Calendar House was partly over the two western bays on the Norman part of the north aisle, and partly projected into Corn Street. Over the eastern or Perpendicular portions of the north aisle was a public library attached to, and communicating with, the house of the Calendars. From indirect documentary evidence, as well as from the character of the building, the dates of the several parts may be stated as follows:—the two western bays of nave and aisle from A.D. 1143 to 1147; the north aisle, nave, chancel, and old tower, about 1350; the rebuilding of south aisle, 1422. There was, according to Wyrcestre, a "*Domus conducti aquæ pulchra sub Domo Kalendarii.*" All Saints' Lane, in Wyrcestre's time was fifteen feet wide, and here were the chief wine shops of the town. There are no remains of the shops, but the trade which flourished here four centuries ago still flourishes.

There appear to have been thirty-eight vaults or cellars in Corn Street, none of these probably now exist. Small Street became a very great thoroughfare after 1247, or upon the completion of the new harbour. Before that time it must have been the fifth street of the town. At one end was the Gate and Church of St. Gyles, at the other end, in Corn Street, still stands the Church of St. Werburgh, (Wereburge—Werburga) which Wyrcestre thus notices: "The length of the Church of St. Wer-

burgh is 21 yards, the breadth 19 yards, the tower 5 yards square. There are six columns and arches, and six five-light windows on each side. There is one window at the east end and another at the west end." Some of the late Fourteenth Century church which Wyreestre saw, is still visible; but the greater part was taken down and rebuilt in 1760-61, because it obstructed Small Street.

The great point of attraction in this street is the remarkable example of Domestic Architecture now used as the Mirror newspaper office.\* This Wyreestre has overlooked. Its position at the back of the old guild hall, and the size of the rooms and richness of its architecture shew that it must have been one of the most important buildings within the walls, and the remains of semi-Norman architecture are sufficient to show that it was a place of importance as early as the 12th century, if not earlier, and it may have been the residence of the mayor for the time being.

THE GUILD HALL.—According to Wyreestre, the width of it was "*cum capella St. Georgii, et cellariis*," twenty-three yards. He also says that Richard Spicer (Mayor in 1371) founded this "*capella ampla*" in honour of St. George, about the time of Edward III, or Richard II. The style of the Perpendicular work in the house in Small Street, and the character of the guild hall as represented in an engraving in Seyer's History of Bristol, fully agree with the statement of Wyreestre.

Broad Street completes this survey, and though in

\* Since the above was written, the building occupied by the Mirror Office has been partly taken down, and the site is now a scene of confusion.

the 15th century it possessed a guild hall, a chapel, and thirty-five vaults or cellars, there is now nothing of interest there.

This terminates the rough sketch of Ancient Bristol, and it is much to be deplored that so many of its ancient features have been swept away. Streets may be too narrow for modern traffic, churches and civic buildings too small for present requirements, almshouses too confined for the health of their inmates, but to improve these in the spirit of wise conservation is one thing, to sweep them out of existence in the spirit of radical innovation is another, we should strive to preserve while we improve and extend.

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# On the Civil War in Somerset.

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BY EMANUEL GREEN.

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WHEN writing for a County Society with an endeavour to localize a subject which has also a national interest, it must be assumed that Members will have already acquired a knowledge of its general history, as affecting the nation, or will seek it where it may be found. The shortest possible introduction therefore just to connect the narrative is all that can be given here.

Charles I ascended the throne in 1625, but attempting to govern the nation in an arbitrary manner, was opposed by several parliaments, and at length from 1629 to 1640 proceeded to reign and govern uncontrolled. During this interval of eleven years, the taxes, imposed by his sole authority were most oppressive and distasteful, causing much discontent, and producing a general ill feeling throughout the kingdom. On the 3rd April, 1640, Parliament again assembled, but being refractory was dissolved in May. The king presently found it necessary, however disagreeable it might be, to call another, and consequently a new House met on the 3rd November, in the same year.

This Parliament was equally determined to continue the

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opposition to the king and to assert its own prerogative. As a step to this end an act was passed by which it was not to be dissolved, except with its own consent, to which the king felt himself obliged to agree, thus creating a second permanent power, strongly opposed to his own, which eventually dethroned him and "reigned in his stead."

To trace the events connected with this struggle between the king and the parliament as far as they concern the County of Somerset, is the object of the present story. The members returned at this election (Nov. 1640) for Somersetshire were for the

## COUNTY.

John Paulet, Knt.

John Stowell, K.B.

## BATH.

William Basset, Esq.

Alexander Popham, Esq.

## WELLS.

Ralph Hopton, K.B.

Edward Rodney, Knt.

## TAUNTON.

William Portman, Bart.

George Searle, Esq.\*

## BRIDGWATER.

Peter (? Thos.) Wroth, Knt.

Edmund Windham, Esq.

## MINEHEAD.

Francis Popham, Knt.

Alexander Lutterell, Gent.

## ILCHESTER.

Sir Henry Berkley

Robert Hunt, Esq.

## MILBORNE PORT.

Edward Kirton, Esq.

John Digby, Esq.

Clearly with the object of removing a member likely to support the king, and thus hinder the intentions of the House, on the 21st January, 1641, Mr. Windham was deprived of his seat as being a monopoliser and projector, and a new writ was issued for Bridgwater.† At the new election Mr. Thomas Smith was returned in his place.

Mr. Windham was not allowed to rest, on the 30th October in the same year, he was "sent for" as a delin-

\* A Catalogue of the Knights, Burgesses, &c., 1640.

† Commons' Journal, Vol. 2.

quent, an order occasioned by his connection with the soap monopoly, a source of much trouble and discontent at the time. One of the members for Ilchester too, was objectionable; on 15th February, 1641, using as an excuse that "due notice had not been given to the electors" a new writ was issued and Sir Henry Berkley, who presently appears as a staunch royalist, was removed, Mr. Edward Phillips, replacing him. Mr. Hunt was re-elected.

Two great sources of grievance were now put forward, the first relating to church matters, caused by the haughty pride of a political clergy, who enjoyed a lucrative and easy monopoly; the prominent and judicial position assumed by the bishops and the innovations introduced, under the direction of Archbishop Laud of Canterbury, into the conduct of the Church Services and which we know in these days as ritualistic, and the further believed intention of the king with the connivance of the bishops and urged by the queen (a papist) to introduce popery as the national faith. Many events occurred relating to this question, which are both interesting and amusing, but they may fairly be dealt with as a separate history.

The second grievance was that of the civil government, and with it a stubborn difficulty, the management of the militia or trained bands. To this last and the events resulting therefrom as connected with our county, attention will be entirely directed. The Parliament believing that the king intended, could he get money, to embody this force and use it to strengthen his own power, assumed the right to nominate the lords lieutenant of counties, and of placing the militia under the orders of such nominees, and also appointing for officers, gentlemen of their own party or as they expressed it "those in whom they could confide."

This conduct of the House irritated the king and caused him to take a step which was never pardoned. Persuaded by the queen, he went personally to the Parliament to impeach five active members of high treason, but they were advised of his intention and took refuge in the city. Their chambers however were searched, their trunks broken open and ransacked for papers to criminate them.

Two, of these five, were Somerset men, though both represented places in Devonshire. John Pym, member for Tavistock, who died in 1643, having by his writings and actions made himself famous and respected; and William Strode, who elected both by Tamworth and Beeralston, chose the latter, probably as being in Devon, a county with which he was closely connected, he had been already for several years politically prominent and will be found continuing so on behalf of the parliament until his death in 1645, when he was honoured with a public funeral and the attendance of both Houses, and was buried in Westminster Abbey, near the body of Mr. Pym. He has been called by an opponent "one of the fiercest men of his party, and of his party only for his fierceness."\* Although presently engaged in raising forces in Somerset on behalf of the Parliament, he does not appear to have taken any military status, but after the first difficulties were overcome, to have acted the civilian as one of the committee in the county, or to have been occupied with parliamentary duties in London.

Some time after this attempted arrest he made a speech in reply to the articles of impeachment which were issued against him, "in which he cleared himself of the same," asking for a speedy trial to which he was willing to submit and "wishing and praying with all his heart that the

\* Clarendon's History of Rebellion.

Parliament may go on with courage and cheerfulness to settle all things aright both in Church and State, for the government thereof in perpetual peace and tranquillity.”\*

The House now took high offence at this breach of their privileges, and drew up a strongly worded “declaration” of their view of the king’s conduct, and Sir Ralph Hopton (member for Wells) objected to some expressions in it as not being sufficiently respectful to be used to a king and stated “that they seemed to ground an opinion of the king’s apostacy upon a less evidence than would serve to hang a fellow for stealing a horse.” For this speech he was committed to the tower for “laying an imputation upon the committee which had drawn up the declaration,” but after he was imprisoned it was thought advisable to modify the language used.†

The Parliament, as already noticed was now permanent, and it was soon foreseen that the king would oppose their growing power by force of arms, they consequently proceeded to raise an army for their own use, stating at first that it was only intended for Ireland; supporting this excuse, three hundred men were sent to Minehead, under Captains Pinchback, Manners, and Roberts,‡ to be passed over, but being detained there, a complaint was made to the House (18th May), and it was ordered that those “mere Irish and papists” there, should be forwarded to Ireland and that relief should be sent to the “distressed protestants.”

As the Commons denied the right of the king to tax without their consent, so they had not yet assumed the power of taxing without his, they consequently asked for voluntary subscriptions to support the new army, and the

\* Master Strode, his speech in Parliament, &c., 1642.

† Clarendon. ‡ Bristol Calendars.



events noticed as passing at Minehead, probably drew attention to the payments from Somerset, which were found to be behind, the under sheriff was called in and admonished for his delay, and replied "that the five hundred pounds received (? plate) should be paid in at once, and that for the contribution in money there was as yet only five pounds paid to the sheriff."

The House having cancelled the king's commissions of lieutenancy, on the 11th February, 1642, appointed the Marquis of Hertford, lord lieutenant of Somerset, but the marquis who was attached to the king refused, and on the 24th March, returned answer "that he should be very glad to obey the House and to serve the Commonwealth in what he may," but desired at that time to be excused, for this reason, "that he was not at the debate of the militia and therefore was ignorant of what passed on it, neither did he yet know whether the king had given his consent to it, without which he hoped the House would not impose it upon him." On this refusal the Earl of Bedford was offered, and accepted the appointment, and the next day the lords concurred, and Richard Harbyn, John Pine, Alexander Pym, and William Bull, were added to the list of deputy lieutenants. In other ways the Parliament was ready to assert its importance and authority, and caution was necessary for all who wished to remain unmolested. The conversation of individuals was reported if any words were used disparaging its proceedings; such was the case "concerning some words uttered in Somersetshire," and sent in a letter on the 29th March, from Mr. William Dey of Holeditch, near Chard, to Mr. Venn, a member; and at the same time part of a letter from Mr. Pine, was likewise read in the house concerning some message that was sent from Sir John Stowell and Mr. Coventry to Mr. Lutterell. As

Sir John Stowell and Mr. Coventry were for the king, this message was probably an endeavour to seduce Mr. Lutterell from his attachment to the Parliament. The conduct of various members was also closely watched, and on the king retiring to York to collect his supporters, it was ordered (28th March) that all who had not leave should attend the House, Sir Ralph Hopton, Mr. Thomas Smyth, Sir John Stowell, and Mr. Coventry, were found absenting themselves, and were summoned to attend; Lord Seymour, who presently appears in Somerset, being on his way with leave to his country house, was met by a messenger from the king, ordering him to attend at York, which the Commons hearing, sent a post after him to bring him back; he was overtaken at Northampton, and replied that he would return as soon as possible. On the 4th of April he appeared and asked their lordships pleasure, when he was ordered to attend as a peer of the realm, "in regard to the great business now in agitation in the Parliament."\*

On the 13th August, the gentleman usher sent in his bill for extra expenses, charging for fetching back the Lord Seymour, post £2 16s.; for riding for Marquis Hertford, Lord Trowbridge, and Lord Pawlett, £13 6s. 8d. Lord Capell was ordered to appear at the bar of the House as a delinquent, but claimed privilege of peerage and refused to come.

So far, the king is seen retired to York gathering his friends, and the Parliament raising forces to oppose him, and keeping a close watch on those members who shewed any tendency to espouse the royal cause. The nation meantime had become much agitated, and the state of affairs, position of parties, and events occurring in our

\* Lords' Journal.

county, will now specially and entirely engross attention.

Then, as now, petitions were sent to the Parliament, for, or against its proceedings. On the 10th December, 1641,\* a "remonstrance" from the knights, gentry, and freeholders of the county, was presented to the House of Peers by the Lord Marquis of Hertford.† This was met by a counter petition, presented to the House of Commons 25th February, 1642,\* by Sir Thomas Wroth, who apologised for being late with it on account of the "remotenesse of his county," stating that "it comes not attended with a numerous or multitudinous troop, but guarded with some thousands of hands to attest their approbation and assent." The petitioners express their sorrow at the great distractions and dangers "dayly multiplied," and especially for the late breach of the privileges of Parliament "by the devise as we conceive of a malignant party of popish lords and bishops," and they further express their ardent affection to the Parliament, in defence of which they are ready to shed their "purest blood."‡ An opposition to this was attempted by those who went for the king, it prayed that the Church Government may remain without alteration; that the trained bands be called out until the dispute about the militia be settled; that the money received by the Parliament may be accounted for; and that they would have confidence in his majesty, and endeavour "not to embroile the nation in the greatest of evils as are those of civill discention and ingagement," and for these ends offered willingly to "adventure themselves and fortunes." This petition was at once printed and circulated in the county by the opposite or parliamentary party, and attached

\* New Style used throughout.      † State Tracts, Bodleian.

‡ A speech spoken by Sir Thomas Wroth, Knight, upon delivering a petition from Somerset, 1642.

to it "an answer" of some length dissecting and criticising it most severely. This mode of proceeding was probably successful, and prevented its completion, as after going up and down the county "to beg hands," it was subscribed by "some few," 200 only, and was never presented to the House. The "answer" commences by calling it a "vagrant petition which now travelleth the county begging testimoniall hands to passe it to the Parliament," and asks if there is one amongst the subscribers who of his own understanding and judgement is able to examine and search out the drift and scope thereof except that it is commanded him by some few gentlemen, who are valued by the acre rather than their persons, and who would not have the same opinion and authority were they "meane men" and of poor estate, and further suggests whether by such public expressions of disaffection they may not invite into the county a "malignant" party "who of bad guests will soon become worse masters, domineering over your peace, liberties, and estates, and turning your Somersetshire into a campus martius, an aceldama, a field of blood and dead men's bones."\*

The tenor of this petition was reported to the House, and on the 13th June, by a message sent by Mr. Strode, a conference with the lords was asked concerning it, from which it may be judged how important its now success or prevention was considered, this is further confirmed by a letter read on the 14th, from Alexander Popham to his father, relating to the same subject, it says :—

HONOURED FATHER,

The next day after you went out of this country, this Petition inclosed, was sent to divers places for to procure Hands to it; it hath been read in several churches by the

\* The Somerset Petition, with an answer, &c., &c., 1642.

ministers of these towns. Sir Francis Dorrington sent it to Bath, and writ a letter to George Wilb (*i. e.* Wilby) and Dick Chapman for the advancement of it, all Sir Charles Barkley's Friends and Sir Ralph Hopton's, labour for the advancement of it. Some of Bath gave me notice of it whither I did repair, the Mayor and Aldermen called a Council and sent for me. The Petition was then read. They asked me my opinion, I told them there were great aspersions laid upon the Parliament in it and desired to know who sent it to them. They told me Sir Francis Dorrington, I thought it my duty to give you notice of this that some way may be thought on to nip this in the bud, for otherwise it will set us together by the ears. There are many earnestly for it, but as many violently against it. I will wait on you, God willing, on Monday next at Littlecott.

I humbly beg your blessing,

Your ever dutiful and obedient Son,

ALEXANDER POPHAM.

Hunster, (*i. e.* Houndstreet),

11th June, 1642.

The petition is thrown aside at Bath and yet no Hands to it.

The gentlemen that are to accompany the petition are

Francis Pawlett

Edward Berkley

Ams. Pawlett

Francis Doddington

Ferdinando Gorges

Francis Hawley

Henry Berkley

Samuel Georges

Charles Berkley

Robert Phillips\*

After the reading of this letter Sir Francis Doddington and Sir Charles Berkley, being members, were ordered to attend in their places, a vote in which the lords at once concurred.

Those who attended the king at York, now contributed to his necessities by voluntary gifts according to their means, as others did for the Parliament, in money, plate or horse; his majesty determined to raise an army throughout



the kingdom, and for that purpose issued an authority, known as the "Commission of Array," in which he gave power to those named in it to act on his behalf. The gentlemen in the counties raised troops or companies, either their own tenants or any who would join them, paying all from their own private means, and to this end a subscription was opened at York, 22nd June. At this meeting the following Somersetshire lords agreed "to pay horses for three months, thirty days to the month, at two shillings and sixpence per diem, advancing a month's pay, the first payment to be made as soon as the king shall call for it, after the Commission of Array shall be issued." The Marquis Hertford agreed for sixty horse; Earl of Bath fifty; Earl of Bristol sixty; Lord Pawlett forty; Lord Seymour twenty; Lord Capell one hundred. In this number were not to be reckoned the horses of the subscribers or those who attended them.\*

The Commons had also issued (10th June) propositions for raising money in a similar manner, "for the good of the protestant religion, the laws, liberties, and the peace of the kingdom," promising 8 per cent interest for any sums so advanced, and "it is hardly credible what a vast proportion of plate was brought into their treasurers within ten days, there being hardly men enough to receive it, or room to lay it in, and the throng being so great that many could not be discharged of their offerings."† Mr. John Ashe subscribed for £600, a large sum in those days, besides which other members of his family were equally liberal. Instructions were at the same time issued from which the mode of collecting may be gathered. Every deputy lieutenant being a member of the House, was to present the

\* A Catalogue of Names &c., &c.

† Clarendon.

“Propositions” to his brother deputy lieutenants and receive their subscriptions, and in those counties where no deputy lieutenants were nominated, justices of the peace were to act, if approved by the Parliament, and these, or any two other deputy lieutenants who had “subscribed willingly,” had authority to call together such persons as they thought proper, tender them the propositions and receive their subscriptions ; and further, to nominate such other persons as they thought fit to repair to the several houses in their respective districts ; all contributions to be paid into the hands of “receivers,” to be forwarded to the treasurer in London, who was to return an “acquittance” to the several subscribers. Collectors were to receive a commission on all money sent up by them.\*

Orders were also made for setting the kingdom in a “posture of defence.” Amongst the forts and castles named as necessary to be cared for, is Bridgewater ; it was ordered there should be a guard of a hundred men, such as should be “well appointed and skilful in the use of their weapons.” That officers who were papists, or on complaint made, should be found dangerous persons and not fit to undergo the trust imposed upon them, should be cashiered and lose their places. That all papists within the county should not have greater store of ammunition than their neighbouring protestants, “that thereby the just fear of each county may be removed to the true signification of Parliament’s reall justice and everlasting expression of the subjects joy.”

It was now openly announced that the army was raised in “defence of both Houses of Parliament, the true religion, the laws, liberty, and peace of the kingdom,” and

\* Instructions for Deputy Lieutenants which are Members &c., &c., 17th June, 1642.

Mr. Popham, on the 19th July, was sent into Somersetshire with instructions for calling out the militia and advancing the propositions for subscriptions.\* A "declaration" was at the same time issued that all who obeyed the king should be "brought to condign punishment for so great an offence," and in connection with this an "order" was made (22nd July) summoning Sir John Stoell, Sir John Pawlett, Mr. Smyth, Sir Nicholas Slaning, Sir Edward Rodney, Sir John Strangeways, Sir Gerard Napier, Mr. Rogers, Mr. Rolfe, Sir John Coventry, Mr. Strangeways, Sergt. Hide, and Mr. Edward Phillips, to attend the House, a summons which they probably left unnoticed as they will be hereafter found acting for the king. His Majesty about this time issued the "Commission of Array," and "into the west to restrain those parts he sent the Marquis of Hertford," as his interest and reputation was greater there than any other man's, and with him went the Lord Seymour, his brother, Lord Paulet, Hopton, Stowell, Coventry, Berkley, Windham, and some other gentlemen "of the prime quality" and interest in those parts "who were likely to give as good examples in their persons, and to be followed by as many men as any such number of gentlemen in England could be."†

The marquis, leaving the king at Beverly, arrived in Bath on the 25th July, 1642, where it happened that the assizes were being held, so that he met the principal gentlemen of the county, and as they were generally, "except Popham and Horner," well affected towards the king, he consulted with them as to the best way to proceed in the execution of the commission. After considering the desirability of commencing in Bristol, which notion was

\* Commons' Journals, vol. 2.

† Clarendon.

rejected, "as it was not clear that his lordship's reception in that city would be such as he expected" Wells was decided on as being "a pleasant city in the heart and near the centre of the county," and there the marquis went, "presuming" that in little time by the influence of the gentlemen present with him, and his own reputation, "which was very great," that the people would all join him.\*

But the Parliament party were equally active and more influential with the general population, and they had taken care to announce that the marquis was come to put the dreaded Commission of Array in execution by which all would be reduced to be no better than slaves to the Lords, and that the only way to rid themselves of this tyranny was to adhere to the Parliament; consequently, although the principal and older gentry were with the king, very many others "who had gotten wealth as traders," were with the Parliament, so that when the marquis came to Wells he found himself in the midst of an armed enemy covering the whole county, and his own strength, a troop of horse raised by Mr. John Digby, a son of the Earl of Bristol, and another by Sir Francis Hawley, both of which troops were designed to attend the king in the north, and a troop of horse and dragoons raised and armed by Sir Ralph Hopton, at his own charge, and about one hundred foot "gathered up" by Lieutenant Colonel Lunsford towards a regiment also destined for the king, this with Lord Paulet and about twenty-eight of the principal gentry with their servants made up the marquis's force.†

The judge sitting at the assize in Bath received an "order" from His Majesty to forward the Commission of Array, but he declined to notice it, as well as an "order"

\* Clarendon.

† Clarendon.

from the Parliament to declare it illegal, thus "sayling betwixt wind and water very politiquely;" but the marquis being gone for Wells, "having received but little encouragement in Bath," the constables of some twenty-one hundreds petitioned the judge concerning the Commission, which, with some reluctance, "being soundly put to it, he concluded to be illegal," and complying with a request in the petition, he ordered the votes of Parliament relating to the Array to be read in open court. On Friday, the marquis sent from Wells to the sheriff, to cease his attendance upon the judge and come to him, to aid with his council and assistance. The sheriff replied that he had received commands from the Parliament to suppress his lordship's proceedings, and this command he was resolved to obey, sending him at the same time the constables' petition with the judge's answer.\*

Whilst the marquis was at Wells, Lord Paulet, Sir Ferdinando Gorges, (of Wraxall) and Mr. Ths. Smith, (of Ashton) went to Bristol to get leave to bring troops into that city, but the mayor, (John Lock), refused to permit it, declaring the city to be neutral,† and at this time also notice was sent Lord Hertford that Sir Francis Popham, Sir Edward Baynton, Sir Edward Hungerford, and Mr. John Ashe, intended by force of arms to oppose him, and had for that purpose called out the trained bands of the district. For this purpose the deputy lieutenants of the county and committee acting for the Parliament appointed a meeting for the 1st of August, at Shepton Mallet, to take measures for the preservation of peace in the county, and to issue warrants to the several hundreds, requiring them not to obey the Marquis Hertford and his Commission of

\* True news from Somersetshire, 1642.

† Barret's History of Bristol.



Array, but rather the ordinances of Parliament and such further orders as they (the committee) should give them from time to time, but some of the "wicked incendiaries" of the town, viz.: Richard Board, Hercules Whiting, Nicholas Downton, James Strode, John Walker, and John Coothe, "the Parson," got up a petition to the marquis, insinuating to the people that the coming of the Committee was to fire their houses and to make their streets run with blood; and in the morning about eight o'clock, Sir Ralph Hopton, Mr. Thomas Smith, and Sir Ferdinando Gorges, "father-in-law to Master Thomas Smith," and a hundred horse "at least" came from Wells to publish the Commission of Array, and attempted to read the said petition in the market place, but "Master" William Strode, one of the deputy lieutenants, being within a mile of the town and hearing of the tumult, came with his son and servants, in all but four armed horse, and two unarmed, and demanded the reason of it, "whereupon" Sir Ralph Hopton, "Master" Smith, and Sir Ferdinando Gorges came to him and required him to alight and hear the petition read. "Master" Strode replied, that "he came not to hear petitions but to suppress insurrections, and required the said three gentlemen to leave the town." Upon this Sir Ralph Hopton laid hold of "Master" Strode and his horse, and with the assistance of "Master" Smith arrested him of suspicion of treason, and whilst they were endeavouring to pull him from his horse Sir Ferdinando Gorges struck at him with a halberd and divers "Cavaliers" drew their swords and held their points towards his body, and one of "Master" Strode's servants presented a pistol at Sir Ralph Hopton, and would have killed him had not he been prevented by one, Mr. White, who snatched the pistol from him. Master Strode being thus arrested and forced to

alight, Sir Ralph Hopton read the petition and asked for the supporters of it to come forward, but there only appeared Nicholas Downton, which Mr. Strode was asked to notice, but he replied that Downton was one of the incendiaries of the town, as they were of the county and of the Parliament, and again required them to leave the town, and further, bid the people obey the King as he was guided and counselled by the Parliament, and not as he was guided and counselled by evil counsellors from whom came the Commission of Array, both illegal and destructive to the kingdom. Mr. Strode was given in charge to the constable, that he might be taken to the Marquis Hertford, at Wells, but word was now brought Sir Ralph Hopton that the country people were coming in upon him, at which "he seeming to be amazed," took horse and rode to "the Swan at the other end of the town" to meet others of his party expected there, but as none were yet come, he sent a messenger for Captain John Digby to bring his troop from Sherborne, and rode on in haste a mile out of the town, and with him "one Thomas Strode, a new captain of Sir Edward Rodney's," endeavouring as they went, and with tolerable success, to raise the country, using violence to the yeomanry or any who refused ; many joined him, probably from fear and the habit of obeying anybody who came to them in authority, and were at once formed into troops and companies. After Sir Ralph Hopton's departure the constable was compelled by the people to release Master Strode or lose his own life, and Shepton Mallet being thus cleared of the Royalists, and Master Strode having met "at the town's end" some of his brother deputy lieutenants, they proceeded to their business, but before noon without warrant or request the country people had assembled both horse and foot to the number of 2000, though most un-

armed, and the scouts frequently brought word that others coming were met by the Royalists, beaten and wounded, and their ammunition and provision taken from them. The committee drew this force "into the field" and issued "instruction" for their guidance.

The high sheriff being weak and sickly, Mr. Henry Sanford, his eldest son, came and commanded as "*posse comitatus*," all that were present and the whole county to assist in the service of the Parliament, "which with great acclamation all protested to obey." Two messengers, Messrs. William Long, and Lawrence Bull, "honest men of the county," were now sent to Sir Ralph Hopton, at his halting place, to ask "for what purpose he was thus come armed into the county, if it were for peace, then, that they should return home to their houses, if not, that then they would take it as an insurrection and endeavour to repress it." And when the messengers were supposed to have reached him, all the country people were moved forwards; but Hopton perceiving this, disbanded his force and rode away, some going towards Wells and some to their own homes. Messrs. Bull and Long, coming up with their message, found Sir Ralph Hopton and Mr. Ths. Smith to be the commanders, to whom they delivered it, who replied that they could not answer it until they had spoken with the marquis, and desired them to go to Wells with their party for that purpose, which they did, when Sir Ralph Hopton brought them a reply in writing, that "My Lord Marquis being informed of a great assembly to meet at Shepton, in arms this day, not knowing any cause of such meeting, sent me and some other justices of the peace in order to the peace of this county, to know the cause of such meeting and to prevent the disturbance of the peace." The marquis also gave them a letter, requesting an answer, stat-

ing "I understand there is a great assembly of armed men now at Shepton, which I conceive is unlawful, and desire to know by what authority they are met, for that as yet it seems to me a great violation of the peace of this county, and the kingdome, to appeare so armed." Which message being delivered to the committee, they replied, "After we understood that my Lord Marquis of Hertford came into this county with companies of armed men to put in execution the Commission of Array, which is illegal, and settling himself at Wells, both horse and foot, we, to preserve the peace of the county, came this day to Shepton Mallet."

These proceedings were at once reported to the Parliament in a letter from the committee, dated Shepton Mallet, 1st August, 1642, and signed by

John Horner

Alexander Popham

John Pym

Rd. Harbyn

Hugh Rogers

William Strode

Richard Coley

John Ashe\*

and in consequence by votes of the House, Sir Ralph Hopton, Mr. Ths. Smith, and Capt. John Digby, were deprived of their seats, and with Sir Ferdinando Gorges, Sir Francis Doddington, Richard Board, Hercules Whiting, Nicholas Downton, James Strode, John Walker, and John Cooth, "the Parson" of Shepton Mallet, were ordered to be sent for as delinquents, and the high sheriff and all others were to use their best endeavours to bring them to the Parliament. Sir John Stowell and Sir John Paulet were also deprived of their seats, and a new writ issued for electing two knights for the county. The Lords also ordered that Marquis Hertford, Lord Paulett, and Lord Trowbridge, be apprehended for "using force to the terror of the people."†

\* A Letter from the Committee in Somersetshire, &c., &c., 1642.

† Lords' Journal, Vol. V.

Besides these resolutions, Sir Henry Vane, jun., was ordered to write a letter of thanks to the committee, and to "prepare and speed away" such forces as should be necessary for the safety of the county. Of those named to be "sent for" from Shepton, Mr. James Strode, clothier, and the "Parson" appear to have been arrested, and on the 3rd September, they petitioned the House desiring to be bailed, Mr. James Strode thus obtained his release, the other seems to have remained unnoticed. On the first appearance of the Royalists at Wells and Shepton Mallet, posts were sent to Sir John Horner, "Master" Popham, and others, especially Mr. John Ashe, certifying that the Cavaliers were coming to destroy them, which caused a great stir and combustion in the country, "whereupon every man armed and made ready for their coming." †

On the "great vast" Mendip Hills, above Chewton, was appointed as the place of meeting to oppose these men "who had gone into Shepton and broken into honest men's houses and plundered them, and made their owners with their wives hide themselves for feare," and accordingly people flocked from every house, stuffed with so many doubts and fears, that they thought if they did not "now play the man," they would be "utterly undone for ever," and there presently assembled all that quarter of the shire.

On hearing of these events, Sir John Horner called together his neighbours and tenants, armed them or caused them to be armed, and marched away to Mr. Popham, and thus united, brought to Chewton a regiment, called the Bath Regiment, numbering a thousand men completely armed. Sir Edward Hungerford lent arms to two hundred volunteers, and from his quarter came also two or three

† A relation of all the passages and Proceedings in Somersetshire, &c.



hundred horsemen, some of them well armed, the rest only a sword or pistol ; and all "Master" Smith's tenants, some forty yeoman well armed, and the inhabitants of Sir Ralph Hopton's district (Evercreech) "even to his very gates." (Master Smith and Sir Ralph Hopton were Royalists, and at this time with the marquis in Wells.) There were also there "Master" Cole, "Master" Harbyn, "Master" Hipsley, and John Ashe ; Mr. Rogers, Mr. Francis, Mr. Pine, and Mr. Strode could not come being prevented by the Royalists.

The number thus congregated was estimated at forty thousand men and women, fifteen thousand being from Somerset and the others from Wilts and Dorset, Gloucester and Bristol, the men from the last being "of very good quality, all on horseback with swords, pistols, and carbines,"\* many of the others bringing "pitchforks, dung-picks, and such like weapons," not knowing who they were to fight against, but "supposing they were Papists." Two waggon loads of powder, bullet and match, and four small field pieces, (six pounders) were sent from Bristol, although the mayor and sheriff, "through the influence of Lord Paulet and Master Smith, hindered, or pretended to hinder it with all their skill." This force being put in order, but with "much adoe" for want of expert commanders, marched on Friday, 5th August, to the top of the hill above Wells, where they lay that night, having been without food all the day ; Mr. Alexander Popham and his valiant brothers, Sir John Horner and his youngest son, and many other young gentlemen, "tenderly bred" laid in their arms on furze bushes in the open field, and the old knight often said "his furze bed was the best that ever he lay upon." The next morning provisions of all sorts

\* A true relation of the passages between the Cavaliers, &c., at Wells in Somersetshire.

were sent in from the country round and there was sufficient and to spare both for breakfast and dinner, many having to carry their store home again, all offers of payment being refused. The camp being thus victualled the people could hardly be prevented from at once assaulting the town, "to destroy the Cavaliers" and take those "delinquent" gentlemen with the marquis to the Parliament.

So far, both parties are seen prepared and opposed to each other, and truly the Marquis Hertford instead of finding friendly support as expected, found himself in the midst of an armed enemy. And now occurs the first bloodshedding in Somerset. The increasing assemblages around Wells caused the Lord Hertford some anxieties, he ordered the keys of the magazine to be given up to Sir Francis Doddington, he disarmed the "well affected" to the Parliament and all strangers, and warrants were issued under his hand jointly with the Lord Paulet and Lord Trowbridge for "bringing in armed men," and patrols were sent out to guard the city from surprise. On Thursday, the 4th August, one of these patrols numbering, Royalist's account says about sixty, other party says one hundred and twenty to one hundred and forty, horse under Sir John Stowell, Sir John Paulet, and Colonel Lunsford, guarding the western side, and "ranging" about to bring in horses, met a party estimated to be five hundred strong, coming from Bridgwater and parts adjacent Glastonbury, under Colonel Pine and Mr. Strode, with Mr. Rogers and Mr. Francis; seeing they were outnumbered, Colonel Lunsford placed himself in ambush in a pit by the road side with twenty troopers armed with carbines, whilst the remainder advanced a little towards the Parliamentarians who had now approached to within musket shot, and sent them a message by Mr. Saunders, of Petherton, demanding their

### ADDENDUM.

*Page 64, line 25, after "met" and before "a party," &c.,  
insert "near Marshall's Elm on Polden Hill" (Ludlow's  
Memoirs, p. 25.)*

NOTE.—This was not only the first blood shed in Somerset, but was also the first shed in England in this war, and consequently the spot above named has a special and peculiar historical interest,—E.G.



intentions, who on being answered that they were going to join the army on Mendip, desired every man to return to his own home, this request was refused, and further answered that if they could not have their way by fair means they would by foul; both sides now prepared for an encounter, and the western men advancing on their supposed weak enemy at length came within reach of the ambush, who firing suddenly amongst them, they knew not from where, caused them to throw down their arms and fly. Two were killed, and next day two were found dead in some corn close by, fourteen more were wounded, and Captain Preston was taken prisoner, together with fifteen horse, thirty muskets, and other ammunition of no great value. Captain Preston was examined next day, 5th August, as to his intentions, by William Basset and Anthony Stocker, two justices of the peace, and simply replied that he was on his way with the others in his company to join the army on Mendip. This wounding and killing very much daunted some of the "honest countrymen" at Chewton, but not sufficiently so to make them forsake their "good intentions," others being the more exasperated and angered, were impatient for revenge, and could hardly be "prevented from firing the Cavaliers' houses and were resolved to have Sir John Stowell's body as satisfaction for these men inhumanly caused to be slain."\*

A patrol of, one account says "all," the Royalist horse, also went out by Shepton towards Mendip, and on approaching Chewton the people were "stroken with a great affrightment," and the cry was raised "the Cavaliers are coming," and a "confused noise" was heard in the camp; the Mendip army having but few horsemen, probably did not like the idea of being thus attacked, but having "made

\* Special Passages, 15th Aug.



a bravado," the Cavaliers returned to Shepton, where they spent sometime in refreshing themselves at the inns and taverns, and some, marching round the town found out the "honest and religious" mens' houses, (*i.e.*, those of the Parliament party) which they broke into and plundered, and then having done their "pranckes," first billeting one hundred troopers there they returned to Wells,\* informed the marquis of the great number they had seen and asked for leave to encounter them, which he "out of his goodness" refused. Lord Paulet at this time attracted notice, but without gaining friends, by announcing in a speech, "in the height of fury," with many "imprecations, oaths, and execrations," that he considered ten pounds a year sufficient for any yeoman, intimating that when his party had the power on their side they should be compelled to live on that sum. As this intention was considered to include all below the rank of gentlemen, it so inflamed the people that they attempted to seize him as he was speaking, and were prevented only by the interference of Mr. Alexander Popham Sir John Horner and his son, Mr. Pine, and others who had command over the regiments there; but it was argued that he who would propose ten before he had possession would give only five when he was possessed, therefore the people resolved to dispose themselves better, and "with the hazard of their lives and fortunes, secure their lives and fortunes."†

Lord Hertford made another attempt to read the Commission of Array, having now gathered about five hundred excellent horse and about three hundred foot very well armed, "which did strike terror and amazement to many in the country," and would probably have forced the trained bands into subjection to his authority had not he

\* A perfect relation of all passages in Somerset, by John Ashe.

† A momento for Yeomen, Merchants, Citizens, &c., &c.

been again opposed by "Master" Strode and others, who with only one hundred and fifty men meeting him near Wells, were "not fearful to encounter with him," being stout and resolute and resolved to spend their lives in the cause. Much parley and debate ensued with many threatening speeches from both sides, a truce being agreed on meanwhile, nevertheless a sudden and treacherous assault was made on "Master" Strode's regiment and many were hurt and twelve reported as slain, but the marquis and his followers not being able "to stand it out," retreated into Wells pursued by many of the country people, and were at once set down as "merciless men, they care not what they do."\* The prisoners taken in this encounter were demanded and refused, so some guns were planted against the city which it was threatened to batter down unless they were delivered, "as the people have resolved rather to lose their lives than be slaves."† Wells, now in great distress from the exactions of the Royalists within, was beset on all sides without ; on the hill coming from Bristol were Sir Francis Popham and Sir Edward Hungerford with six thousand men and two pieces of ordnance, which were mounted against the Bishop's Palace. Between Glastonbury there were Sir Edward Baynton and Sir John Horner with eight thousand men. On the hill between Shepton Mallet were "Master" Strode, "Master" Pine, and "Master" Cole, with three thousand more, and two pieces which they had mounted to command any part of the town, and there presently came a party of one hundred and twenty horse from Taunton Deane, who had assembled at the sound of trumpet, under Captain Pym and Lieutenant Howard, (Hayward?) the "sight of which gave the foot

\* More later and truer newes from Somersetshire, &c., &c.

† A true and sad relation from Somersetshire, by Joseph Prowd.

a little more life," they having still comparatively but few horse to match the well-equipped cavalry of their enemy. These new comers were put by Sir Edward Hungerford, "after a courteous welcome" to guard the north-east end of the town, "which goes up to the Downs to meet the Shepton and Wells road."\*

The army being thus placed, Sir Francis Popham ordered some shots to be fired against the Bishop's Palace, which "was strong and moated round about," and which the Royalists had made their head quarters, and the committee sent five propositions to the marquis, stating that if they were not agreed to they would "fall on the town." The marquis seeing himself thus threatened, and being forsaken by the few of the trained bands who had joined him, sent a message to Chewton, on Friday, 5th August, by Messrs. Anthony Stocker, William Basset, and Richard Brown, who, being justices, were sent for as specially suited for this duty, asking if the peace of the county may not yet be preserved. In reply a full answer was promised next morning, as Mr. Strode and others of the committee had not then come, and in the meantime a truce was agreed on. The next morning the committee produced their answer and sent it to Wells by "Master" Giles Hungerford, William Eyre, George Bampfield, and "Master" Prickman, attended by a trumpeter.

1st.—They asked that the marquis should withdraw from the county.

2nd.—That his force should be disbanded, disarmed, and cashiered.

3rd.—That any gentlemen of the House of Commons, incendiaries, or others with him should be sent up to the Parliament to answer for their delinquencies.

\* Joyfull news from Wells, in Somersetshire.

4th.—That the arms &c., seized from several houses should be restored, and satisfaction made for any damage.

5th.—That all prisoners should be released, adding, that unless these be at once “yielded unto” we much doubt whether it will be in our power to keep our soldiers from assaulting the town.”

These messages were signed on the part of the Royalists by

Hertford	John Paulet
Paulet	Fras. Doddington
Seymour	Chas. Berkley
J. Coventry	Fras. Hawley
John Stowell	Will Walrond
F. Gorges	Thos. Smith
Hy. Berkley	Edwd. Kirton
R. Hopton	Edwd. Windham

For the Parliament by

Edwd. Hungerford	Robt. Harbyn
John Horner	John Hipsley
Alexander Popham	John Ashe
Richd. Cole	

The marquis on receiving these propositions, at once made ready for leaving Wells, but to keep the people “in expectation” that he may get away if possible unnoticed, an answer was returned by three gentlemen, Master Stocker, Master Seymour, and Master Button.

To the first he replied that if they wished to petition the King, he would not proceed with the Array if they would forbear to execute the ordinance of the militia, and that he would disband his volunteers if they would do the same.

2nd.—That as to the soldiers, they were the King’s, but if it was desired to have them removed he would “yield unto it.”

3rd.—That he knew of no incendiaries or authors of combustion with him, and did not expect such scandalous terms to be used in a treaty of pacification.

4th.—He knew of no arms or goods taken, but if it should be so, restitution should be made, provided the same was done to him.

5th.—He had delivered, before receiving the propositions, all prisoners then with him.\*

Thus gaining an hour or two by this message he, during the interval, made a sally as if to go towards Glastonbury, which drew the Parliament foot to that quarter, but suddenly changing his front he marched for Sherborne, the cannon being too “high on the hill” to hurt him, but exchanging shots with the Taunton Deane horsemen. On his departure the mayor and citizens of Wells sent messengers to Chewton announcing the fact, and to petition that the soldiers may not come down, nor attempt anything against them, but the Mendip men “who had spent the night in prayer and singing psalms” entered the city with such great expressions of joy as is hardly imaginable,” gloried in having vanquished “the Papists,” tore down the painted glass in the cathedral, and “visited” and sacked the Bishop’s Palace, but did “no harm” but to his organs, wine, and pictures, one of which last, supposed to represent the Virgin Mary, was put on a spear and carried about in contempt and derision.†

The gaols were found filled with people of the “meaner sort,” and the city much “rifled and racked;” the poor had been “spoiled and pinched,” and such havoc made that it was estimated that £10,000 (equal to £50,000 of our money) would not make satisfaction. Towards this last

\* A second letter sent from John Ashe, Esq., &c.

† God in the Mount.



both parties, as is usual in such cases, probably contributed in equal proportions.

These proceedings being known to the Parliament, to further encourage their partisans, on the 8th August they issued a declaration "for raising all power and force of this kingdom, &c., to oppose the Marquis Hertford, Sir Ralph Hopton, John Digby, Esq., and other their accomplices "who for their own unlawful purpose have gotten together great forces in the county of Somerset, with intent to subvert the liberty of the subject and alter the religion and ancient government, and to introduce popery and idolatry, and an arbitrary form of government," and promising that all who assist in opposing them shall "be justified, defended, and secured" by authority of Parliament.\*

Wells thus passed into the hands of new masters, and as usual the tone of the people changed to please them. Sir Ralph Hopton being gone, his own tenants and servants came against him and cried him down for his conduct in these proceedings, more than they had previously extolled him at the "late election." My Lord Paulet was "hated of all men," and Mr. Smith was pitied as being seduced by the other great ones, "and it is believed if he could fairly retreat he would be no longer of that faction."

\* A Declaration of the Lords and Commons, &c., &c.

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# On the Clifton Rocks.

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BY W. W. STODDART, F.G.S.

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OF the many thousands who annually visit the Clifton Downs, probably few, if any, go away without admiration of the scenery. The foliage of the Leigh Woods, whether green with the youth of spring, or tinted with the varied hues of autumn, always forms such a combination of colour, that the eye is relieved and the mind of the visitor pleased.

Then again, what painter could equal the rich colouring of the massive cliffs, which from their angles of inclination expose immense slabs of the purest limestone. Every time we turn a corner, a varied scene presents itself, and to the thoughtful mind is a studio in which the natural historian may follow his favourite pursuit with pleasure and delight.

It is perhaps to the geologist that the deepest interest is afforded ; to him questions occur in our earth's history of the most thrilling interest.

Standing on the edge of the old camp on Clifton Down, he sees the spot where the terrific power of the earth's interior had once been displayed, rending asunder the rocks and coal measures to the depth of nearly a quar-

ter of a mile. In another place he sees the memorials of a coral reef, where hundreds may now be found in all stages of growth, or of a sea bottom over which extended the slimy pseudopodia of myriads of foraminifera, burying with their tiny shells multitudes of little univalves whose bodies very likely were once their food. The busy steamers, the invention of the present century, claim his attention, ploughing their way over beds that once held waters which were the home of hideous and immense sharks, whose mouths were paved with crushing teeth, and which now enrich the cabinets of nearly every museum in Europe.

Here too, many hundreds of feet of limestone are literally made up of exquisitely formed sea lilies, whose nature has been so carefully studied and illustrated by our friend Major Austen.

I should detain you far too long were I to tell you of half the treasures in which the geologist might revel. With your permission I will now proceed to describe the section forming the Clifton Gorge, dividing my paper for the sake of regularity, into six heads, viz. :—

- 1.—The Physical Features.
- 2.—The Old Red Junction.
- 3.—The Lower Limestone Shales.
- 4.—Massive Mountain Limestone.
- 5.—Upper Limestone Shales.
- 6.—Millstone Grit.

1. PHYSICAL FEATURES.—So interesting is the district in which we now are, and so rich and varied are its objects, that one is almost tempted to extend the subject, as announced in one of our notices, “the Geology of the Bristol District,” but as I have no time to write a good sized book, nor wish to fatigue you by reading one, I will confine my paper to the Clifton Rocks.

The city of Bristol is placed on the confluence of two streams, the Avon and the Frome, not more than twenty feet above the mean sea level. This circumstance it is which causes the tides of this port to rise so high, being, with one or two exceptions, the highest in the kingdom. This flat portion of the country was formerly marsh land, the remains of which may now be seen at Baptist Mills, Bedminster, and Horfield. On both sides this marsh land, are high lands separated by valleys through which the before-named streams run ; after meeting, the river passes through the Clifton Gorge into the Severn. On the north and west sides, the Bristol district is bounded by palæozoic formations ; on the east and south by triassic and jurassic. Notwithstanding the low level on which Bristol is built, there are several hills having a considerable elevation, *e.g.*

	FEET.
Dundry Hill (an oolitic outlier of the Cotswolds)	700
Ashton Hill .. .. .	270
Troopers Hill .. .. .	230
St. Vincent's Rock .. .. .	315

These elevations give the geologist a most valuable key to a knowledge of his position.

No neighbourhood of equal area can vie with that of Clifton and Bristol in geological interest whether considered lithologically or palæontologically.

When it is taken into consideration that within a radius of six miles no less than five complete geological systems are very fairly developed, it will be at once understood how good a field it is for the student of the natural sciences. The most complete of these without doubt is the carboniferous formation to which entirely Clifton is indebted for its grand and picturesque scenery.

The Clifton section is an epitome of this formation,

offering unequalled facilities for observation and study. The lowest level, namely that on which the city of Bristol lies, consists of alluvial soil and Keuper deposits, which fill up all the irregularities of the pennant and carboniferous rocks.

On the east, the coal measures come to the surface, which probably were once continuous with the Welsh coal fields, but now severed by denudation, except it may be at great depths north and south.

At earlier periods of the earth's history, very strong currents passed over the district from north east to south west, at all events there exists very strong evidence that such was the case during the time that the Cotswold and Dundry Hills were forming.

At that time how different must have been the scene, the bold escarpments and cliffs running south of where Gloucester now is, with their gulfs and bays and small islets, surrounded by a rough sea, separating England and Wales, like the Irish Sea now separates Wales from Ireland.

(Geologically speaking) just before this, occurred that convulsion of nature which formed the great fault running from Leigh Woods across the Coalfields to Mangotsfield and Will's Bridge. The fault is splendidly seen just beyond the station of the Port and Pier Railway, where the massive limestone abruptly terminates and is succeeded by broken ground, consisting of heaps of millstone grit, coal, and limestone, all crushed and forced up together giving evidence of irresistible power. Singularly enough this great break in the continuity of the rocks gives rise in this place to a repetition in the series. This is better explained by the diagram before you. The strata have sunk into the earth 800 feet.

The Clifton limestone series is part of the great basin connecting the Mendip and Cheddar Cliffs on the south, with the Shropshire and Staffordshire beds on the north. The whole of the limestone beds commence and end with their argillaceous and sandy beds termed "shales," and occupy a position between the old red beds at the bottom of Cooksfolly and the coal measures at Brandon Hill, where the lowest member is seen attaining a thickness of 950 feet.

The section now to be described begins a little below Cooksfolly and terminates at Brandon Hill. The angle at which the beds dip to the S.S.E. varies with the locality. At the Hotwells the strata dip at an angle of  $40^{\circ}$  which gradually decreases to  $13^{\circ}$ , then quickly rises to  $70^{\circ}$ ; the curved nature of the strata denoting great pressure. There are about 800 to 1000 separate beds of limestone between the old red, before mentioned, and Brandon Hill, having altogether a thickness of about 3000 feet.

Before going into detail I would mention a curious deposit that is found filling up the cavities of the limestone almost everywhere, and we frequently hear it called per-mian. This we believe to be an error, from the extensive investigations of Mr. Sanders, who for more than thirty years has been mapping the district. The deposit is a conglomerate, composed of fragments of the older rocks, Devonian, carboniferous, millstone grit, and coal, all mixed and cemented together by magnesian limestone. It is nothing more than the basement bed of the trias or new red, with which it is perfectly conformable and horizontal. The triassic sea washing against the older rocks, broke them up, the heaviest pieces collecting against the foot of the cliffs. It is exactly so that we now find them either as a bank or heap, at the foot of a limestone or sandstone



cliff, or filling up a crevice. Sections of this remarkable conglomerate may be seen at the drawbridge and still better on the new rail to Portishead. In it we find the beautiful geodes or as they are commonly called "potato stones," they are hollow balls of quartz crystals, chalcedony or calc spar. The crystals are often pierced by multitudes of minute spicules of manganese and peroxide of iron. In other places the finest known crystals of celestine or sulphate of strontia have been collected together with galena and calamine. It was in this also that Messrs. Riley and Stutchbury found the thecodontosaurus and palæosaurus, distinguished from other saurians by having their teeth implanted in distinct sockets.

2. THE LOWER LIMESTONE SHALES rest immediately upon the old red sandstone and are about 500 feet thick comprising one hundred and forty-seven beds. The actual junction lies 35 feet above a well-known conglomerate of quartz pebbles, below this we find nothing but sandstones, but above it lime gradually creeps in till the beds become argillaceous limestone. Nearly the whole of the lower shales are covered by Cooksfolly Wood, but now that the Port and Pier Railway is finished a good section is obtainable, and also a little lower down on the opposite side of the river. They are extremely rich in fossils, especially encrinites, trilobites, and brachiopods, comprising nearly ninety species.

About 72 feet from the bottom of the shales are two green and red marly beds of considerable interest at the present time. They contain the same fossils that occur in the Coomhola grits of Ireland, and the Pilton and Marwood groups in Devonshire, where they were always considered as old red, but the present section goes to shew that really they belong to the carboniferous. They abound



with *Modiola Macadami* *Avicula Damnoniensis*, and multitudes of the little entomostraca. (*Leperditia* and *Cythere*.)

About 10 feet above these is a most singular fossil bank that once formed an inclined and sandy sea shore. It is so completely made up of minute fossils that a pound of the stone actually yields more than 1,600,000 organisms, principally consisting of encrinital joints, univalves, and entomostraca. Above this again is a rich palate bed, quite full of the the teeth, spines, and coprolites of fishes; from it besides these, the collector will find many of the rarer shells as *lingula*, *conularia*, &c.

The remaining beds are equally rich, whole slabs being covered with the exquisite little polyzoon, *Cerriopora rhombifera*, and arms, heads, and stems of encrinites.

3. MOUNTAIN LIMESTONE succeeds the shales and forms the principal part of the Clifton gorge, it comprises five hundred and twenty-five beds having a total thickness of 2000 feet.

The colour varies, being white, black, and many shades of red. The dark colour of the lower beds gives the local name to the quarry, "Black Rock." This black colour is probably owing to the presence of bituminous matter, some portions smelling very strongly. Frequently the workmen come upon a small cavity full of rock oil which is in great repute for rheumatism. In the Black Rock quarry are found some of the finest specimens of the remains of placoid fishes which in that age were of tremendous size and power. The dorsal fin spines are very large and perfect. A fine collection of these and other local fossils is open to all in the museum of the Bristol Institution. The next, or Great Quarry, exhibits a section of the highest beds of the mountain limestone. Not so many fossils occur here, although some very fine corals and

palates are sometimes found in the upper part. Between the beds of limestone are often seen small cubes of fluor spar. In this quarry the lime is so pure that 99 per cent. of carbonate of lime is often present.

A most remarkable example of the effect of pressure may be observed in the lower part of the Great Quarry and is considered well worth a visit of the physical geologist. Some of the bottom beds have given way, while the upper ones have been actually forced in by the superincumbent strata. At the top of this quarry it is that the great fault previously mentioned occurs, and causes a repetition of the limestone series.

During our excursion on Friday, you will easily see now that you have an explanation of the fault, that St. Vincent's Rocks are merely a continuation of those in the Great Quarry. At the top of the cliff, near the north buttress of the suspension bridge, a dyke of the conglomerate may be well seen.

On approaching the zigzag, several very thick beds of limestone project, cropping out at an angle of  $30^{\circ}$  to  $35^{\circ}$  over the pump room. From these beds it is that the Hotwell water springs at the rate of sixty gallons per minute, at the temperature of  $76^{\circ}$ . Each gallon contains 15.3 C.I. of carbonic acid and nitrogen gases. The amount of salines is only 44 grs. per gallon; not so much as is usual in mineral waters, for instance the Bath waters contain 120 grs. to the gallon.

The Hotwell salts consists of the chloride, nitrate, sulphate, and carbonate of magnesia, with the usual lime salts, a little carbonate of iron and organic matter, and about 6 grs. of chloride of sodium. From the small amount of salts, arises the curious fact, that the Hotwell water actually is a better tea maker than that from the Clifton wells.

Dr. Grenville, in his work on the Spas of England, speaks of this water as containing  $26^{\circ}$  of volcanic heat, but I think this expression must be an error. The chemical evidence points to its origin being in the conglomerate beds, and its heat being attributable to chemical and not volcanic agency. Above this series of mountain limestone we arrive at

4. THE UPPER LIMESTONE SHALES which differ altogether in lithological character from the lower shales; they are very sandy and gritty, instead of argillaceous as in the latter. These beds are exceedingly rich in corals, and no doubt are the site of an ancient coral reef that existed in the carboniferous seas. This opinion is strengthened by the occurrence of oolitic beds underneath, in which we now find small shell and foraminifera just as in the present day.

In these beds more than twenty species of corals are found from a few lines to a foot in diameter. The upper shales comprise about 209 beds having a total thickness of 500 feet. They are best studied at the present time in a cutting for the Portishead Railway.

5. THE MILLSTONE GRIT is the last formation to be mentioned, as it closes the Clifton series. It is the floor of the coal measures, the lowest portion of which rest upon it. This grit is usually very ferruginous, hard, and compact, so much so, that it is preferable to granite for pitching and paving. It may be well studied at Brandon Hill, from whence it passes under Park Street, St. Michael's Hill, Kingsdown, Stoke's Croft, and on to Easton. In many parts of its course good iron ore has been obtained. The beautiful crystals of peroxide of iron and göthite are obtained between the millstone grit and the upper shales.

The millstone grit has a thickness of 950 feet. Major

Austen has found and described a large number of fossils in it, to whose work on the subject I must beg to refer you.

This, then, closes my necessarily very brief description of the Clifton Rocks, alike magnificent for scenery and interest to the natural historian.

To give some idea of the store of geological treasures, I may mention that I have collected 255 species of fossils from the Clifton section alone; many of them of great beauty and rarity. Our visitors will find them all exhibited in the Park Street Museum.

I will remind the botanists that St. Vincent's Rock is the habitat for some scarce and local plants, such as St. Vincent's Rock Cress, (*Arabis Stricta*) St. Vincent's Stone Crop, (*Sedum rupestre*) Rock Hutchinsia, (*H. petræa*). The Wallflower, (*Cheiranthus Cheiri*) here grows in a truly wild state.

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# On Sutton Court and Chew Magna.\*

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BY SIR EDWARD STRACHEY, BART.

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**S**UTTON COURT is the Court or Manor House of the Manor of Knighton Sutton, which is one of the three Suttons (the others being Bishop Sutton and Sutton Wick) included in the territory of Chive granted by the so-called Charter of Edward the Confessor to Wells Church. It was called Knighton Sutton, or *Sutton Militis*, because held in knight's service, and not by base tenure as was Bishop Sutton, and John Strachey says he is inclined to think it consisted of the six hydes held, at the making of the General Survey of Domesday, by Robert, of the said Bishop, part of the said manor. There were,

\* This paper, or its substance, was read by me at the request of the Members of the Society on the occasion of their visit to Sutton Court. It is now printed by the wish of the Committee; but while I am very sensible of the honour they thus do me, I fear that it cannot be of much interest to those to whom the place itself is unknown. A set of plans would also be required to make clear the successive alterations of the house, of which the latest were made by myself in 1858-60, under the directions of Thomas H. Wyatt, Esq., with as much care to preserve the old building as was consistent with the necessity of making it habitable.—E.S.

about 1737, six "livings" within the said tithing or manor, including the Court or Manor House. These are now (1867) reduced to Sutton Court, Sutton Court Lodge, Knighton Sutton Farm, and a cottage.

If John Strachey is right in supposing that Knighton Sutton was held by Robert when the Domesday Survey was made, there was probably at that date some dwelling where Sutton Court now stands. The earliest parts of the existing building are the Square Tower with turret stair-case, and the Great Wall. The Tower is built on the plan of the Peel Towers, with three rooms one over the other. The present entrance door-way has existed as long as I (E. S.) remember, but I found traces of a window having been there before the door. The ceiling beams between the ground and first floors are the original, at least they are older than the arch into the hall, as a portion has been cut out to make room for the arch. On the first floor there was a window in the west wall, and another of which the label remains in the same wall on the second floor. This label was taken down before I could prevent it, and it looks as though it had been replaced too high up. The room on the first floor had a plain ceiling with a wood cornice, entirely decayed, of the pattern of that now in the south porch. What remains of the Great Wall, belongs, I presume to the same date as the tower : in my childhood it returned on the east from the point at which it now ends to the end of the terrace, with large gates in the middle of that wall, and I suppose that it may have been continued all round the line now formed by the lower terrace walls, as these all follow the lines of old foundations of walls which in my childhood were much higher than now, and the two pillars at the steps leading to the south avenue are now only about one third of their then height, when



they had a gate corresponding to that in the north court, and no doubt the wall was in proportion to the gate in height. The lines of walls and gates, with others which have now disappeared, are laid down in John Strachey's plans. I found a considerable mass of foundations at the south east corner of the lower terrace, large enough for a tower, and there is an indication of some building there in one of those plans. I conjecture that "Building Bess," of Hardwicke, or Mrs. Baber, (of whom hereafter) may have cut down the old walls on the south in order to make them suitable for a terraced garden.

That part of the battlemented wall which now connects the coach house and laundry with the house, does in fact run into the house, forming the north wall of the kitchen and hall, and so meeting the tower.

In this tower then, and within the battlemented wall, probably lived William de Sutton, holding of the Bishop by knight's service, and who in the Michaelmas Term of the 16th year of Edward II, (A.D. 1322), pleaded that William, Le Parson's servant had trespassed in his Close, called Crondell's, and to which William replied that he was servant to the Rector of Stanton Drew, who had right of pasture there after the corn was carried off. And John Strachey, who quotes this record from the Placita, adds that "a Close of that name belongs [in his own day] to a tenement called Parsons', because the owner for many descents had that surname."

This William de Sutton, of whom we here get a glimpse, may have fought at Bannockburn, or in the civil wars which were now just over for the time; but when the Rector of Stanton Drew disputed his right to the pasture of Crondell's, after the knight had reaped his corn from it, the knight instead of resorting to the force

which in those disorderly days might have seemed the more obvious remedy against the parson's servant and the cows he was driving into the field, was content to sue him before the king's judges, like a peaceful citizen. Perhaps the parson gained the day, since more than four hundred years after the land was called "Parson's Tenement," and had been so long enough to give that surname to its possessors.

In 1346, on the aid of forty shillings on every knight's fee granted, 20th Edward III, for making the king's eldest son a knight, William de Sutton, probably the same William as had the plea twenty-four years before, is charged for half a knight's fee here, (which must have been his tower at Knighton Sutton,) which Walter de Sutton formerly held of the Bishop of Bath.

In 1429, Knighton Sutton had passed into the possession of the St. Loes, but whether by marriage or purchase is not known. For, Anno 7 Henry VI, by an Inquisition taken at Axbridge, John de Sancto Laudo is certified to hold that quarter of a knight's fee which William de Sutton formerly held.

This family of the St. Loes is said to take name from the town of St. Laud in Normandy, over the gates of which their arms were to be seen in the 17th century. When they came to England is uncertain, for their name is not in the Battle Abbey Roll, and though their arms were, when John Strachey wrote, within a Garter impaling Ancel in the roof of their aisle at Chew, yet, he says, neither Ashmole nor Hylan have their names among the knights or registers of that order. The first mention of them in this county is that, 47 Henry III, John de Sancto Laudo holds half a fee in Niweton and Puppelow. John de Sancto Laudo was sheriff of Dorset and Somerset

for six years, from 1284 to 1290, in Edward I's reign, and the lists of their manors show them to have been a great family. Their pedigree and arms are given by John Strachey, and he observes that St. Loe of Newton was he whom Leland calls Lord Seintelo, from a young brother of whom Sir John St. Loe of Sutton, was descended.

One of these St. Loes no doubt added the Manor House at Sutton Court to the Tower. The archway, as I have said before, was cut through the south wall of the Tower to connect it with the Hall. This connection made necessary some variation from the ordinary plan of the Tudor Manor House. The plan of the house as I recollect it, and indeed much of the house itself, must have been what it was from the first. In the Hall, the Minstrels' Gallery, of black oak, ran along the west wall: and below was one entrance door to the north, in a line with which the north avenue was planted, and a corresponding door with porch on the south. There was a large square-headed door into the kitchen near the south end of the west wall, and a pointed arch, (from which the present doorways in the hall are copied) in the same wall nearer the north-west corner. This latter opened into a narrow dark staircase, partly in the wall and partly projecting into the kitchen, which led to the gallery, and so into the rooms over the porch and kitchen, and to rooms to the north in a line with the tower. Part of the old roof timbers of the hall, black with smoke, but not carved, remained in my time, and a very large Tudor arch, extending almost from the present door to the archway in the north wall marked (and under the plaster still marks) the ancient fire-place. The present south porch I presume to have been originally the bay window of the Hall. The door is modern, but the two side windows are old. I found them built up in their pre-

sent places. The St. Loe arms, now inserted under the kitchen window, were found by me on the west wall of the kitchen, concealed by other buildings.

The original window of the panelled room adjoining was smaller than the present, and I found between the buttresses and the window a built-up doorway. The room itself would seem to be later than the south porch, as the porch window on that side has been blocked up by the room, within which it comes. That window is of red sandstone, not of Dundry stone as the other old ashlar work is, and is of very ancient character.

The plans of John Strachey, with my recollections of the house, and the plans made before my alterations, enable us to form a tolerable notion of what the house formerly was in many respects. The old roof, walls, floors, and ceilings, which were in great decay when I came to Sutton Court, must have been to a great extent those of the original Manor House. The stairs in the principal part of the house were solid blocks of oak, used as stone is now.

In 1518, 9 Henry VIII, Elizabeth, late wife of Thomas Sydenham, and second wife of Nicholas St. Loe, before she married Sydenham, is certified to hold this manor, which could be only in dower, or else as guardian to Sir John St. Loe, son of Nicholas, who died 24 Henry VII, 1509, seized, among other estates, of Levithie, Sutton, Camerton, Puckerston, Farmboro, Stoke, and Sincross of the Bishop.

Leland, who wrote about 1534,\* came here by way of Pensford, which he describes as "a praty market towne,

\* Hearne says (Preface v.) that Leland obtained the king's commission for the purpose of visiting all places containing records, in the 25th year of his reign, which would be 1534. But in the title by Burton in Hearne, Vol. i., p. 1., we read "begunne about 1538, 30 H. 8."

occupied with clothing : there comythe doun a Streame that ferythe dyvers Tukkyng Mills." He goes on :—" From *Pensford* to *Southetoune* Village. Here hathe *Ser John* Seint Lo an old Maner Place, 2 long Myles by Hyllly and enclofyd Ground meatly well woddyd. Ser John Saynt Lo descendithe of a Yongar Brothar of the Lords Seint Lo, and hathe litle of his Lands. For the last Lorde Saint Lo lackynge Heyres Malle, the Land descendyd by Heires generall onto the Lord Hungerfordes and the Lord Botreaux.

"A good pece of Ser John Saint Lo Lands comythe to hym by De la Rivers Dowghtar and Heire, his Fathers Wyfe or Mothar.

"From Southetoune unto Chute a Myle and halfe by fayre enclofyd Ground. It is a praty Clothinge Towne and hathe a fayre Churche, and at the Southe Syde of the Churche is a fayre Maner Place of the Bysshope of Bathe.

"There be dyvers Paroche Churches there about that ones a Yere do Homage onto Chute theyr Mothar Churche.

"There hathe bene good makynge of Clothe in the Towne.

"Ser John St. Lo Graund Fathar lyethe in a goodly Tombe on the Northe Syde of the Churche."

Sutton Court then was an "Old Manor Place," when Leland, collecting by way of New Year's Gift to Henry VIII, his personal observations of the actual state of England, arrived there, riding from Pensford through the "enclosed fields and meetly wooded hills," which still remain as in the days of St. Loe. He appears to have stayed several days at Sutton, as he gives the distances from thence to the neighbouring places of which he describes the fair parks and woods, and dwelling places, with a picturesque detail that shows that he was actually visiting them as he wrote. He tells us what no doubt Sir



John St. Loe told him of the family pedigree, visited the pretty clothing town of Chew, and its fair Church and Manor Place of the Bishop, and it may have been the sight of the several gates through which the daughter churches yearly sent their processions to the mother church (and which gates to the churchyard are remembered by inhabitants of Chew now living) that led him to mention the fact that they “yearly did homage unto Chute their mother Church.” Then he rode to Midsomer Norton “by somewhat hilly and enclosed ground.” He says, “I passed over a pretty brook a 2 miles or I came unto Northeton. It ran down on the left hand as I rode.”\*

It may have been three or four† years later that Sir John St Loe welcomed another guest to his Old Manor Place,—Hooper, afterwards Bishop and Martyr,‡ whose family were retainers of the St. Loes, and who now claimed his lord’s shelter from the storm of the Six Articles, within the old towers, and the battlemented walls, and the meetly wooded hills round them.

Sir John St. Loe died 30th Henry VIII, 1539. His grandson Sir William St. Loe was Captain of Queen Elizabeth’s Yeoman Guards, and Chief Butler of England, and first married a daughter of Mushamp, whose arms, three butterflies, were, (says J. S.) in Mr. Lyde’s parlour at Sutton,—now the Knighton Sutton Farm-house.

He then married Elizabeth Hardwicke, afterwards called “Building Bess,” and who had four husbands, Barlo, Sir W. Cavendish, Sir W. St. Loe, and George Earl of Shrewsbury. She built “2 stately rooms at Sutton,” the Great Parlour,

\* Hearne’s Leland 1711, Vol. vii., pp. 84, 85.

† The Six Articles were enacted in 1539.

‡ My authority is a short notice of Hooper in a small quarto book of Martyrs, which I quote from recollection.



and the Chapel over it. The Great Parlour was a kitchen in my childhood, as it had been for about a century. It was wainscotted, with the now closed windows open to the north, with window-seats; and two smaller windows, to the east, instead of the present large one, which was put in by the second Sir H. Strachey. The Chapel, which was a drawing-room when the Parlour was a kitchen, is said to have been dedicated to St. John.\* I found the remains of a carved oak roof which still exists, but so much decayed, mutilated, and patched, that I could not restore it. On the west wall of the chapel are the corbels which must have supported an external pent-roof to some form of gallery and stairs for entering the chapel. The external doorway now behind the south east buttress of the great parlour was removed by me from its original place as the doorway to the chapel, where it had been built up, just below the corbels. There was also a doorway built up in the north wall of the house, near the present entrance of the passage to the chapel, and which no doubt led to a gallery under the pent-roof. But of this mode of communication no traces were visible in my childhood, except the corbels and the chapel doorway high in the wall. There was probably a like communication below, as there were doors in the adjoining corners of the great parlour and the lobby, as may be seen in the drawings of the house before my alterations.

Over the chimney in the Great Parlour were the arms of St. Loe, with nine quarterings, and bearing the date 1558, and under written, "J. S. Marg<sup>t</sup> S." Margaret St. Loe appears to have been the daughter of Fitz Nicholas and the mother of Sir William St. Loe. And it would

\* The Rev. T. B. Johnstone of Clutton tells me that my father told him this.

seem as though this must have been *their* heraldic achievement, but put up in the great parlour by "Building Bess," with the date 1558, which was the year in which her husband Sir W. St. Loe died.

John Strachey says these arms were "formerly over the chimney, but given [I suppose by him] to Col. St. Lo of Little Fontmell, Dorset," the then living descendant of Sir W. St. Loe's brother Edward.

I suppose that "Building Bess" may also have panelled the dining room walls and put up the present carved oak chimney piece. The stone part is modern, its arch copied from one which I found behind a modern chimney piece in the little parlour. The little parlour and the lobby were wainscotted with the same pattern panel. The lobby had a double window seat, unhappily destroyed with the panelling.

Sir W. St. Loe disinherited his daughters by his first marriage, and gave his estates to "Building Bess," who gave this of Knighton Sutton among others to her second son Charles Cavendish, whose son was created Earl of Newcastle by Charles I. It is named in his wife's account of their estates. It was let on lives to Edward Baber, Esq., of Chew Magna: his widow (a descendant of the old Somersetshire family of Cross of Charlinch and Blackmore), afterwards purchased the reversion, and eventually left it to her son John by her second husband William Strachey, whose ancestors held lands in Saffron Walden, Essex, in the 4th Elizabeth. The name (Strech') appears in the Inquisitions of 46 Henry III, and 23 and 29 Edward I. Sir John Strachie, or Streeche, was knighted at the Investiture of Edward Duke of Cornwall, the Black Prince, in 1337, and in the 20th Edward III held Roynton, Sandford, and Athelardston. His son John was Sheriff of Devon in

1380, and of Dorset and Somerset in 1384, and bore the arms which the family still bear. His granddaughter Elizabeth married John Speke, of White Lackington in Somersetshire.

The picture over the Hall chimney piece is the Countess of Newcastle, with Mary of Orange, to whom she was governess. The pictures of Mrs. Baber and her son John Strachey are also among the portraits.

John Strachey was a friend of John Locke, whose father lived in the neighbourhood, at Belluton near Stanton Drew. In Lord King's life of Locke are several letters from Locke to John Strachey, of which Lord King says they "were probably returned to Locke after the death of the friend to whom they were written." They are written, two or three from Cleve in 1664, one from London and one from Oxford in 1665, and one from London June 15, 1667. The following passages refer to Sutton :—"Throw by this in some corner of your study, till I come, and then we will laugh together, for it may serve to recal other things to my memory, for 'tis like I may have no other journal."—"That private observation I have made [as to the apprehensions of a French invasion in 1665] will be fitter for our table at Sutton than a letter, and if I have the opportunity to see you shortly, we may possibly laugh together at some German stories : but of my coming into the country I write doubtfully to you, for I am now offered a fair opportunity of going into Spain with the Ambassador : if I embrace it I shall conclude this my wandering year ; if not, you will ere long see me in Somersetshire."—"I write to you from London as soon as I came thither, to let you know you had a servant returned to England, but very likely to leave it again before he saw you—as I have the satisfaction that I hope shortly to see

you at Sutton Court, a greater rarity than my travels have afforded me : for, believe it, one may go a long way before one meet a friend. Pray write by the post, and let me know how you do, and what you can tell me of the concernment of

Your most affectionate friend,  
J. LOCKE."

" The Dutch have burned seven of our ships in Chatham. It is said this morning the French fleet are seen off the Isle of Wight. I have neither the gift or heart to prophecy, and since I remember you bought a new cloak in the hot weather, I know you are apt enough to provide against a storm. . . . Things and persons are the same here, and go on at the same rate as they did before, and I, among the rest, design to continue

Your faithful friend and servant,  
J. L."

John Strachey married Jane, daughter of George Hodges, of Wedmore, Elm, and Buckland. Their son John was the antiquarian, of whose map of Somerset and MS. Collections I have already spoken. He published two papers on the Coal Fields of Somersetshire in the Philosophical Transactions, 1719-25, on which he founded a Tract entitled " Observations on the different strata of earths and minerals, &c., 1727:" and in 1739 an " Index to the Records," which was the only book of the kind until the government publication of the Records now in progress. The Map of Somersetshire was engraved and published ; but the History remains in manuscript, though in great part, if not entirely, written out fair for the press. The printed proposals for their publication are as follows :—

London, July 24. 1736.

# PROPOSALS

For Printing by SUBSCRIPTION,

## SOMERSETSHIRE

ILLUSTRATED;

IN

A *Topographical Description* and a *Natural and Geographical History* of that County.

By Mr. STRACHER.

In the General History is included some Account of the *Belgi, Cangi, and British* Inhabitants:

The Progress of the *Roman, Saxon, and Danish* Conquests in these Parts.

Their VALLA, particularly the Course of *Wandf-ditch*, the *Foss*, and several other *Roman* and old Roads are traced:

Their Towns, Fortifications, Camps, and Temples described, and many of their Pavements, Inscriptions, Coins, &c. explained.

The Ecclesiastical History of the Bishopricks, Abbeys, Priories, Nunneries, Chuntries, Hermitages, Free Chappels;

Containing the Lives of such Prelates, Abbots and Churchmen who have made any figure in the Learned World. Particularly a compleat List of the Bishops of *Wells*, and Abbots of *Glaston*, and of such other Abbots and Incumbents of Churches as can be recovered.



The several DONATIONS and GIFTS to such Houses, and their DISSOLUTION, not only from printed Authors, but from the Archives and Registers of particular Churches and Parishes; and from other Manuscripts.

The old and new *Valor Beneficiorum*, and their several Patrons and Dedications.

In the GENERAL DESCRIPTION are set forth the Bounds, Divisions, Rivers, Soils, Perambulation of the Forests, Agriculture, Manufactures, Manners and Dialect of the People, the Markets, Fayres and Revels; the Sheriffs Turns, the Hundred and County Courts; an exact List of the Rates and Proportions of each Division and Tything to the Land-Tax.

In the TOPOGRAPHICAL Part is included the Genealogical History of the antient Land-Holders, taken from *Dooms-day*, the *Red Book*, and many other Records of the Exchequer, *Leland*, *Cambden*, *Dugdale*; and several Corporation Charters, and Deeds in private Families, shewing their Alliances with most of the Nobility and Gentry in other Counties of *England*, and their Arms.

Interspers'd every where with the NATURAL HISTORY of the Baths, Medicinal Waters, Earths, Minerals, Coal, Stone, Metals, and Fossils; also of Animals; Remarkable Persons, as Physicians, Lawyers, Poets, Writers, &c.

Following mostly the Method of Sir *William Dugdale* in the Topographical and Genealogical Part, and of Dr. *Plott* in the Natural History.

Subscriptions are taken by Mr. LEAKE, at *Bath*; Mr. COSLY, at *Bristol*; Mr. CODRINGTON, at *Bridgwater*; Mr. NORRIS, in *Taunton*; Mr. BROWN, in *Wells*; Mr. WICKHAM, at *Frome*; Mr. SENEX, in *Fleet-Street*; Mr. STAGG, in *Westminster-Hall*, Booksellers; the Rev<sup>d</sup>. Mr. DODD, at *Charleton Mackerel*; Mr. WOODFALL, Printer, without *Temple-Bar*: And by the Author in the Country.

## P R O P O S A L S .

THERE will be above 200 Coats of Arms of antient Families extinct, besides those of the Subscribers to the Map and Book; which will be engraved and inserted in the Places where their Families flourished or had their Seats; And such Subscribers who have not their Residence in the County, shall have their Arms and Names in separate Plates, as an Appendix.

Besides which, there will be several Copper-Plates.

The Book is now ready for the Press, and will contain near 200 Sheets in Folio, on a very good Paper and the same Letter with these Proposals. For which,

Half a Guinea to be paid at subscribing, and one Guinea more on Delivery of a perfect Book in Quires. But if many more Memorable Materials should be communi-

cated whilst the Work is printing, the Subscribers are desired on Delivery to pay one Shilling for every five Sheets added.

Whosoever, for the embellishing this Work, shall send a Draft or View of their Seats, shall have it engraven in a Copper-Plate, and printed on a Sheet of the same size to bind up with this Volume, and a Duplicate by it self to put where they think fit, at a Guinea and half for each Plate of a Sheet; and for a Church or Monument of their Ancestors, Half a Guinea on a Half-sheet. And any antient Coin, Antiquity or Curiosity, of less Size, shall be inserted *Gratis*, with the Name of the Person communicating it. Of which, there will be several Copper-Plates.

The Map shall be divided into Sheets of the size of the Book, to be bound up with it in proper Places.

As a specimen of the History I give part of the account of Chew Magna, which was visited by the Members of the Society after leaving Sutton Court. A comparison with the corresponding account in Collinson will shew that several facts of antiquarian interest had been lost out of men's memories when the latter wrote, and probably this

may be a fair specimen of what would be found to be the case on a complete collation of the two Histories.

“CHEW. The River having passed by Stoke and Wally as before said runs on to Chew-magna or Bishops Chew, the first addition from being the Chief place or Capital of this hundred, the other appellation because it belonged to y<sup>e</sup> B<sup>p</sup> and was peculiarly appropriated to his Table.

“In Edw: The Confessor’s Charter to Wells Church he confirms to them the Territory of Cive\* L mansions in the villages of Littleton Haselet† Dundrig & the Thre Sudtunes—& in Domesday its recorded—

“Ep: [Wellensis &c;] holds Chivv. he held it in ye time of King Edw: it contributed to the Publick as 30 hydes. There is 50 plough lands, there are 4 hides in demesne 6 plowlands 14 Servi 30 Villani 10 borderers—Val: £30.

“Of the same Land Rich. holds of the Bishop v hides, Robert vi hides, Stephan’ v hides, Aluric vij yard.

“Bishop Ralph de Salop [who presided between y<sup>e</sup> years 1329 & 1336] appropriated this manor to the Bishop’s Table, & Reserving the Tythes of the Demeasne Land, gave the remaining tythes to the Vicar whence it comes to be called a Vicarige endowed, and the Tythes of the Demeasne Land since called Overland from the alienation is p<sup>d</sup> to the Lord of the Manor.

“‘Chew,’ saith Leland, ‘is a pretty cloathing town, and hath a fair Church. There be diverse paroch Churches thereabout that once a year do homage to Chew, their

\* cīpo & cīpe

† Littleton is now but an house or two in Stone Tything, and Hazle was a large wood cut up not many years since in the Tything of N. Elm, perhaps North Wike adjoining might be the mansion of that Vill.

Mother Church.' It is a peculiar, & in its jurisdiction are the Churches of Stowy, Stoke, Norton Malereward, besides Dundry wh<sup>h</sup> is annexed to it.

"I have before mentioned a matrimonial Lic: granted by the Vic: of Chew to ye Curate of Stoke. I have seen likewise another old writing in the same gent's hands in the following terms:—'Universis pateat per presentes quod nos Officialis Jurisdictionis de Chew Venerab. Patris Dñi Rad. Bathoni Episc: Coñifs. General. Audivim' computū Steph. White & Thomæ Executor. Test: Dñi Johs White nuper Rectoris Ecclæ de Ubbeleyâ defunct. & Invenim' dict Execut. bona dict defuncti benè & fideliter Administrasse. ipsos ab ulteriori comput'. Absolvim' & ab officio nostro dimissim' pr presentes dat apud Chew Calend. Octob: 1361'—I dont apprehend Uibly was within the Jurisdiction of this Peculiar but that this Commissary Gen: of the B<sup>p</sup> was also official of this Jurisdiction, and acted in the former capacity.

"The Church is a large building of Three Isles, & seems to have been either rebuilt or thoroughly repaired in the time of Bishop Beckington, whose arms are dispersed in severall parts of it. But the North Isle was certainly founded principally by S<sup>r</sup> John S<sup>t</sup> Loe, grandfather to that S<sup>r</sup> John who in Leland's time lived at Sutton, & whom he says with his Lady lyes there. S<sup>r</sup> John lyes in armour, his head piece under his head, and a lyon at his feet, a broad collar of SS round his neck—his lady lyes on his Left Hand, both of a large stature, on an Altar Tomb wh formerly stood in y<sup>e</sup> midst of the Eastern End of the Isle but is now removed to the corner. In the Wainscotted Roof of this Isle are carved 4 Escutcheons, 1. St. Loe. 2. St. Loe impaling Ancel, viz. a Saltire engrailed between 4 Lyons heads all within a garter.

3. Y<sup>e</sup> 5 Wounds of our Saviour. 4. Bp. Beckington viz: his Rebus also, being a Beacon and a Tun, & near the N. dore of y<sup>e</sup> same Isle 2 Palmers Staves in Saltire between 2 discipline whippes are in the Roof. St. Loe's arms are likewise over the Great Western Dore of the Belfry & on y<sup>e</sup> outside of the South Isle & on the Church house. B<sup>p</sup> Beckington came to the See 1443 & y<sup>e</sup> same year dyed Alicia late wife of John St. Loe Esq<sup>re</sup> as by a gravestone in y<sup>e</sup> said Isle appears and on the same stone is cut Here lyeth the Body of Edw. Baber Esq<sup>re</sup> of Sutton Court in this parish. he deceased 21 Ap. 1665 aged 80. This Isle is still maintained by the possessors of Sutton Court which shows that at the time of its building the St. Loe's were resident there.

"In the Chancel are several gravestones of the family of Jones of Stowey, see forward.

"In the upper part of y<sup>e</sup> S Isle is a family monument first to y<sup>e</sup> mem: of Edw. Baber Serg<sup>t</sup> at law who dyed 1578 & Catharine his Wife 1601. whose effigies are at length side by side, y<sup>e</sup> Serg<sup>t</sup> in his gown & coif. Francis Baber Esq, who dyed 1643 & Ann Whitmore his Wife who dyed 1650. & in the vault underneath is since interred Edw. Baber Esq<sup>re</sup> who dyed 1713 & Florence da. of Bourn Esq. his wife who dyed 17—.

"In a lower window of the said South Isle, as tradition goes, is the Portraiture of one Hautvil cut in oak armed cap a pee & leaning on one elbow cross legged. Of this person are an hundred fabulous tales, as that he was a Saracen, & saving the life of Sir John in y<sup>e</sup> Holy Land was entertained by him & rewarded by him w<sup>th</sup> y<sup>e</sup> manor of Norton, which he taking for 2 little satisfaction called Malereward, but the truth is none of y<sup>e</sup> family of St Loe were seated here so antient as the Holy War. Moreover



he seems himself by his effigies crosslegged to have been a K<sup>t</sup> Templar, & of the family of Hautvill, sometime Lord of Norton Hautvil in this parish, as will be mentioned therein. Other ridiculous stories of his gygantick strength & of his Quoit do not deserve a Relation. By this lyes the body of a modern soldier Major Sam<sup>e</sup> Collins who from a private man gradually advanced himself by merit alone to 6 successive commissions in the same regiment of Horse, &c.

“In the South side of the Church the B<sup>p</sup> had, as Leland calls it, a fair manor house. In my time there was a gallery standing crossing to the Church whence a Window opened to the South Isle, from thence, thro’ a hollow which is now shut up, like a cubbord in y<sup>e</sup> corner next y<sup>e</sup> Chancel, the B<sup>p</sup> or any of his family might see the Elevation w<sup>h</sup> was the height of the devotion of those times without y<sup>e</sup> trouble of coming into the Church—There was also another Long Gallery standing in my time, wainscotted with Cubbords or Presses for books in the Wainscot, & a fire-place at one end, which was the B<sup>p</sup>’s Library or Study, all which were taken down by Edw: Baber, Esq. about y<sup>e</sup> year 1698, & nothing of the old building but the Gate-house is now remaining, but there is out of it a good appartment with kitchings & other conveniences erected but only serves for the Farmer who rents the Demeasnes which Demeasne Lands lay chiefly in the Tythings of Knowle & North Elm, & by the accoumpts of John More, Steward there, 8 H. 8. to B<sup>p</sup> Adrian de Castello the rents of Assize amounted to £31 16s. 6d. the rent of Overland £28 7s. 3½d. referring to the like Account ma y<sup>e</sup> 24. H. 6. & with Services & additional proffitts 54. 7d. corn, hay, & grass sold with Works & Services &c. £32 10s. 7½d.”

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Att Wells Assizes

Aug<sup>st</sup> 14<sup>th</sup> 1716

# ARTICLES OF AGREEMENT TO PREVENT THE UNNECESSARY CHARGE OF SHERIFFS.

WE whose names are hereunto written observing that notwithstanding a Statute made in the 14<sup>th</sup> year of King Charles the Second to prevent the unnecessary and unlawful Charge of Sheriffs, yet such persons as have been Sheriffs since that time in the County of Somers<sup>t</sup>. have been att great Expences Contrary to the said Law, w<sup>ch</sup> we suppose to have proceeded from the apprehensions they have had that those that should begin the reformation might be liable to Censure as men more avaritious than those who preceded in the said office So that for want of good Example the law is Contemned and broken.

- (1) First it is therefore agreed by all the persons whose names are hereunto subscrib'd, that no one of the s<sup>d</sup> persons when he is made Sheriff of the s<sup>d</sup> County have above thirty livery men nor under twenty for his attendance att the assizes or any other place in the County where his presence shall be required of w<sup>ch</sup> number the livery men w<sup>ch</sup> are to be provided by such Gentlemen as are Subscrib<sup>rs</sup> to these articles shall be part.
- (2) Secondly that when any of the s<sup>d</sup> Subscrib<sup>rs</sup> shall be made Sheriff of the s<sup>d</sup> County the livery shall be a plain Cloth Coat or Cloak and lined thorough w<sup>th</sup> Serge a black Staff Edg'd and Sutable javelin w<sup>ch</sup> livery shall serve any other of the s<sup>d</sup> Subscrib<sup>rs</sup> who shall be afterwards Sheriff, Except the said livery has been made use of three severall years, and then any Subscrib<sup>r</sup> who shall be made Sheriff if he thinks fitt may have a new livery, and ev'ry Subscriber shall accordingly provide for him by Information given by letter from the s<sup>d</sup> Sheriff according as it is more largely expres'd concerning the method for the first Sheriff who shall be of the s<sup>d</sup> Subscrib<sup>rs</sup> in the fifth Article.
- (3) Thirdly no Subscrib<sup>r</sup> being made Sheriff shall by himself or under Sheriff keep any table or bear any mans Expences att his or their ordinary more than their own and Servants.
- (4) Fourthly that when any one of the s<sup>d</sup> Subscrib<sup>rs</sup> shall be made Sheriff of the s<sup>d</sup> County ev'ry other of the s<sup>d</sup> Subscrib<sup>rs</sup> shall appear w<sup>th</sup> one man habited in such livery as afores<sup>d</sup> to attend such Sheriff and meet the judges att the assizes for the s<sup>d</sup> County and shall constantly dine w<sup>th</sup> the s<sup>d</sup> Sheriff att his ordinary and bear his own and Servants Expences during the whole assizes, w<sup>ch</sup> ordinary (bespoke by the s<sup>d</sup> Sheriff) shall not exceed four shillings for meat beer and ale (all wine to be paid for by those that call for it) nor the Servants Ordinary above twelve pence, and in case any of the s<sup>d</sup> Subscrib<sup>rs</sup> shall be hindered by any occasion from giving such attendance that then he shall send some other Gentleman to represent him and do in all things as he ought to have done if personally present.

- (5) Fifthly for making the attendance on the s<sup>d</sup> Sherriff as equall and inexpensive as may be to all the Subscrib<sup>rs</sup>. It is agreed that the number of Subscrib<sup>rs</sup> shall be equally divided into two Columns those in the first Column to attend the Sherriff att the winter asizes and those in the second Column to attend the Summer asizes and those that attend the winter asizes the first year shall attend the Summer asizes the next and So (vice versa) for ev'ry year. And whosoever of the s<sup>d</sup> Subscrib<sup>rs</sup> shall be first made Sherriff shall divide them into Columns as afores<sup>d</sup> and Shall send a Copy of these articles w<sup>th</sup> the Columns so divided to Evry Subscriber and shall signifie unto him where the Cloth and Trimming for his livery may be had and shall take such further care that for the Conveniency of Each Subscrib<sup>r</sup> it may be bought at some Convenient place for all. Provided that no divisions shall be made into Columns untill the number of Subscribers do Equall or Exceed the number of thirty.
- (6) Sixthly it is further agreed that when any Subscriber shall be Sherriff upon notice given by him to the other Subscrib<sup>rs</sup> they shall send their Livery Servants to attend him upon any urgent occasion whatsoever w<sup>th</sup> may fall out in the County where such appearance of his and such attendance may be required.
- (7) Lastly it is agreed that when any Subscrib<sup>r</sup> shall be made Sherriff he shall conform himself in all things according to the Act of Parliament for the restrayning the Excesive Charge of Sherriffs. And further it is agreed by the Gentlemen that shall subscribe these present Articles, that if the number of Subscrib<sup>rs</sup> hereto shall att any time exceed the number of thirty then those Gentlmen that have Serv'd as Sherriffs before the time of their Subscription shall be excus'd. And that the agreement shall comence and be in force from the time of the Date first w<sup>th</sup>in written as to all the present Subscrib<sup>rs</sup> hereto. And for the future from the time of Evry other Subscrib<sup>r</sup> Setting his name hereunto, and that the Day of such future Subscriptions shall be added to each future Subscrib<sup>rs</sup> Name.

JA LYDE  
GEO SPEKE  
JEPP CLARKE  
THO COWARD  
JOSEPH BROWNE  
WM PEIRS  
HENERY STRODE  
WM APPLIN

GEO: BALCH  
SAMUEL CLARKE  
JO: JONES  
JO: STRACHEY  
ED RYDER  
GEO MUSGRAVE J<sup>N</sup><sup>R</sup>  
FRANCIS NEWTON

*(From a Manuscript in the possession of Sir E. Strachey, Bart.)*

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# Catalogue of the Feline Fossils in the Taunton Museum.

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BY W. A. SANFORD, F.G.S.

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IT is commonly considered that the bones of *Felis spelæa* and still more of other species of *Felis* are rare in the cavern and other deposits of the Pleistocene period in England ; but a large number of these bones having been found in the collections which were purchased by this Society from the Rev. Mr. Williams and Mr. Beard, we think that it will be for the interest of science that a list of them should be published, which we have endeavoured

to make useful by inserting descriptions of the more remarkable specimens, and by observations on the different parts of the animals, and of those most nearly related to them, whether fossil or recent. We have, also, by the courtesy of the Council of the Palæontographical Society, been enabled to give an opportunity to a limited number of those who may feel an interest in the subject, to possess a set of illustrations of the catalogue.

### I.\*

The differences between the skeletons of the larger species of known recent *Felis* are extremely slight, and are confined to very few parts of the animal, individual variation entirely obliterating specific distinction in almost every part of the skeleton. In the skulls, however, we find minute characters which appear to be constant in each of the two largest living species, and these must be our guide in the distinction of the fossil forms.

The skull of the lion can always be distinguished from that of the tiger by the comparative flatness of the top of the skull, (the "frontal bones") (11); there being always in the tiger a slight median furrow, bounded by slight longitudinal elevations. These "frontals" are united to those immediately behind them (the "parietals") (7), by a suture, which is always nearer the large "post-orbital processes" (*t*) in the lion than in the tiger; the position of this suture gives what may be readily understood as a more short waisted aspect to the lion's skull than to the tiger's when looked at from above, as in Pls. VII and X. In the tiger the lower part of the opening of the nostrils is contracted, so that a sort of step or curve of treble curvature is formed on the inner surface of the "inter-

\* The numbers and letters attached to the names of parts of the skull refer to those in Pls. VI, VII, VIII, XI, X.



maxillaries" (22), or anterior bones of the upper jaw; whereas in the lion this part is more open, and the step, if it exists, is very slight.<sup>1</sup> The upper points of the "nasal bones" (15) project further into the "frontals" in the tiger than in the lion, so that a line joining the upper points, "frontal processes" (*i*) of the "maxillaries" (21), by which they are united to the "frontals," always cuts off a portion of the "nasals" in the tiger, whereas it always falls entirely on the "frontals" in the lion. The upper points of these "frontal processes" are always more pointed in the lion than in the tiger, in which animal they are truncated.<sup>1</sup> In the lion the small "posterior palatal foramen" (*j*) is always nearer the posterior edge of the palate than in the tiger, when skulls of equal size are compared. The anterior bone of the base of the skull, (excluding the vomer) the "presphenoid" (9), is furnished with a central longitudinal ridge in the tiger, which is almost entirely absent in the lion. The inferior boundary of the lower jaw is straight or concave in the tiger, whereas in the lion it is always more or less convex, frequently forming a large projection near the middle of the jaw, this is called the "ramal process" (Pl. I *a*), this shews an approach to the form of the jaw of the hyæna. The "ramal process" is seen in its greatest extent in the genus *Otaria* and other forms of seal.

These characters are founded on the examination of above one hundred and fifty skulls of lion and tiger of all ages and sizes, and from many localities. We find that other distinctions which have been insisted on by anatomists are not constant, and are therefore not of specific value.

<sup>1</sup> Owen. Proceedings of the Zoological Society of London, January 14th, 1834.

In all the above points *Felis spelæa* agrees with lion and differs from tiger; and in somewhat similar points, but not always the same, the smallest skulls of *Felis spelæa* differ from the largest of panther and jaguar, the size alone in all but one or two exceptional cases forming an easy means of differentiation. The only differences we can discern between what we must now call the fossil and recent lions are, that we have found no recent lions so large as the largest fossil, and the limbs are, as far as we can judge from bones which apparently belong to the same skeleton at Taunton, were frequently stouter in the fossil than in the recent animal,<sup>2</sup> and this observation also applies to the teeth and to the lower jaw (see the gigantic No. 16 of the catalogue). But still we find other bones, including nearly perfect skulls, from all parts of the skeleton, which can be exactly matched in size as in every other particular by bones of the recent animal, and there is a complete series connecting the largest and smallest bones; so that we have no alternative but to state, that we believe that there is no specific difference between them, and that the largest *Felis spelæa* was nothing but a powerful variety of the existing lion.

Three other fossil species have been described which are about the size of lions and tigers. One, *Felis atrox*<sup>3</sup>, was a native of America, and of this a figure of the lower jaw has been published by Dr. Leidy. The apparent position of the "ramal process" in this jaw afforded presumptive evidence of the difference between this animal and *Felis spelæa*, but we have recently cleaned a jaw from Bleadon, No. 16 of the catalogue, in which the ramal process is in

<sup>2</sup> Ossemens fossiles, Cuvier, ed. 1825, vol. iv., p. 454.

<sup>3</sup> Transactions American Philosophical Society, New Series, Vol. x, 153, Pl. 138.

exactly the same place as in Leidy's fossil—we can find no other point of difference; we consequently, till other portions of the animal are discovered consider that the specific difference of the two species is not demonstrated.

The next is *Felis aphanista* of Kaup,<sup>4</sup> from the miocene of Darmstadt; of this the anterior molar of the lower jaws,  $\overline{\text{PM}3}$ , is nearly as large, and almost exactly of the same form, as that immediately succeeding it,  $\overline{\text{PM}4}$ , in this shewing an approximation to the jaguar, the lynx, and some other smaller *Felcs*. Whereas in the lion, tiger, and *Felis spelæa* this tooth is of a very different form, as may be seen by our subsequent description and the plates. The remains of *Felis aphanista* have been recently identified as those of a species of *machairodus* by M. Gaudry.

The third is *Felis cristata* of Dr. Falconer,<sup>5</sup> a miocene (pliocene?) species of the Western Sub-Himalaya. This differs from our animal by the much greater width and shortness of the bones of the face, particularly of the inter-orbital portion and the “nasal bones,” as well as by the greater projection of the “nasals” into the “frontals,” in this single respect resembling the tiger; a most marked distinction, from which it takes its specific name, is the

<sup>4</sup> Oss. foss. de Darmstadt, Carnivora, Pl. II.

<sup>5</sup> Asiatic Researches, Vol. xix, Pl. 21. Falconer's Palæontological Mems. (posthumous) Vol. ii, Pl. 25, fig. 1, 2, 3, p. 315. It will be seen that I have come to a conclusion on the affinities of this remarkable animal, different from that of the learned naturalist whose loss all lovers of truth deplore. The ounce is so rare an animal that till recently no skull of it was known to exist in this country, and in the most recent memoir on the *Felidæ*, (Dr. Gray, Proc. Zool. Soc., 1867, p. 262), the only skull figured is an imperfect specimen, taken from a skin, both of which were in the British Museum. We think it probable that Dr. Falconer could not have had any knowledge of the skull of this animal, for the extraordinary resemblance to *Felis cristata*, in one of its chief characteristics, could hardly have escaped his searching eye. A more perfect skull of the ounce exists in the College of Surgeons.

enormous height and strength of the sagittal and lambdoid crests, in which it surpasses any *Felis* we know of. In the former character, the shortness and width of the bones of the face, the Indian fossil bears a most striking resemblance to the ounce, *Felis uncia*, of the size of a small panther, from Thibet. This resemblance is so striking, and the two differ so much from any other species of cat in this particular, that we can hardly doubt that the ounce is the last representation of a race of short and wide-faced cats, that long since inhabited the central high region of Asia. *Felis cristata* varied in size from that of a large lion to that of a large panther, about the same amount of variation as that of lion, tiger, or *Felis spelæa*. We have seen three skulls of this animal, two in the British Museum, and one in the College of Surgeons.

Our museum is especially rich in the teeth of *Felis spelæa*. The whole of the adult dentition is well represented by numerous specimens of most of the teeth, and by at least single specimens of all. These form a series, from some not exceeding the size of those of a very small lion, to some as large as any fossils which have been met with, with the exception of a gigantic upper canine which was found at Crayford in the brick-earth of the Thames Valley, by a pupil of Professor Morris, and of which a cast has been given to our museum by Mr. Boyd Dawkins.

The milk dentition is also represented by numerous specimens of all the teeth, except the upper and two of the lower incisors, of these missing teeth we have as yet met with no specimens in any collection.

In order to describe these teeth clearly it is necessary to adopt a system of classification of the different parts of the teeth, which we believe will be found applicable to all the carnivora.

In all teeth with two or more external fangs, we shall invariably find that one external lobe of the crown is supported by two fangs, these may support other lobes as well, but they are invariably both concerned in the support of one which is usually higher and larger than the others, and which has two sharp ridges running one down the posterior edge, and the other is situated more or less on the anterior surface; this lobe we will call (*a*). This answers to the largest lobe in single-fanged teeth, and to the principal lobe in cases where there is but one external fang, though there may be other fangs on the internal side. The lobe immediately anterior to this we will call (*b*), that posterior to it (*c*), other accessory lobes are found anterior to (*b*), and posterior to (*c*); we will call the one (*d*), the other (*e*). These for the most part form the external row of lobes, and are usually connected by a ridge which is only broken by the clefts dividing the lobes; but which is not usually, if ever, continued into the base of the crown, and these lobes are usually supported by two fangs only, the anterior ( $\alpha$ ), the posterior ( $\beta$ ). Of the internal lobes when they exist, we shall find one (*f*), of which the summit is connected with those of (*a*) and (*b*) by ridges, and for the most part supported by a separate or quasi separate fang running more or less into the palate ( $\gamma$ ); these are all we are at present concerned with. In other genera other internal lobes (*g*), (*h*), &c. exist, and other fangs ( $\delta$ ), ( $\epsilon$ ), &c., some of which bend round the hinder part of the tooth, and enter into the external structure. We do not intend to give a minute description of the fossil teeth, but simply to indicate the differences by which they may be distinguished from others which are likely to be found in the same localities.

A good general idea of them may be formed from



those of the common cat, as the teeth vary but little in form throughout the genus *Felis*. As there is but one species of true *Felis* of the size of the lion recognised at present in the English Pleistocene deposits, they may be easily distinguished from others of the same genus by size alone in almost every case, the only animals whose teeth are likely to be confounded with them by even the most inexperienced naturalist, are those of the hyæna, some of those of the wolf, the bear, and in a single case the glutton. When the teeth are unworn, those of the hyæna and glutton can be immediately distinguished by the surface of the enamel, which in these animals is roughened by minute wavelets which cover the surface, and which are easily visible to the naked eye; the wavelets on the feline teeth are so small, at least in the species we are describing, that the surface appears smooth and polished.

The small first and second incisors of the upper jaw, I 1, 2, much resemble each other, I 2 being the largest; they are distinguished by their short curved crowns, consisting of (*a*) with a small (*f*) which is single in I 1, but double in I 2; the fangs are much compressed, nearly of the same breadth and thickness throughout, and slightly curved backwards. The third upper incisor I 3 is a much larger tooth, it much resembles the corresponding tooth of the fossil hyæna, and to a certain extent the lower canine of the glutton; but from both it is distinguished by the smoothness of the enamel, as well as by the greater extent of a deep excavation on the internal and posterior surface. It may be considered as a short sharply curved cone, (*a*), with the above excavation deeply cut out of its internal surface, supported upon a subcylindrical slightly curved fang. These teeth are represented in Pl. XI fig. 2, 2',

3, 3', 4, 4', 4'', the latter is the very perfect crown alone of a perfectly unworn tooth.

The canine C is sometimes of enormous size, the crown is a slightly compressed, and gently curved cone, with a slight swell on the internal and posterior base. It is distinguished from that of the bear by the somewhat greater length of the crown, and especially by two longitudinal grooves on both outside and inside of the tooth, of rather more than half the length of the crown. The posterior edge in perfect and unworn teeth is serrated; the fang is of great thickness and size in the teeth of aged animals, in growing teeth it is nearly straight on the posterior edge, and highly convex externally, but in old teeth the internal outline is strongly bulged. Very small specimens not much exceeding those of the panther in size, are easily distinguished from those of that animal by the more obtuse form of the crown, that of the panther being more acute and compressed. Pls. VI, VIII, XI, C, figs. 1, 5, 6, 7.

There are three false molars. Originally it was supposed that the first, PM 2, was wanting in *Felis spelæa*, and that this formed a distinction between it and tiger;<sup>6</sup> but we find that the tooth is more often present than absent in the fossil form, that it is frequently absent in all the larger *Feles*, and that it is variable in form. It appears from the alveoli to be sometimes bifanged in *Felis spelæa* as in panther, but it is usually a little peg-shaped tooth, with a low central lobe (*a*) very centrally situated, and surrounded by a stout cingulum, a ridge runs lengthwise over the crown. Pls. VI, VIII, XI, PM 2, fig. 8, 8', (*a*). The straightness of the tooth and fang distinguishes it from

<sup>6</sup> Goldfuss. Mem. de la Soc. des Cur. de la Nat. tom. X, quoted by Cuvier, Oss. Foss. tom. VI, p. 454.

the small anterior molar which is sometimes found in fossil bears; the smoothness of the enamel, from the anterior false molar of the hyæna, and the central position of the cone, from the posterior true molar of the wolf, in which the cone is in a much more forward position.

We know of no tooth that can be confounded with the next tooth, PM 3. It consists of (*a*) a large compressed cone with a sharp ridge connecting it with (*b*) which is always small and sometimes hardly visible, the ridge passes over the summits of (*c*) and (*e*), and terminates on the well developed cingulum on the posterior edge of the crown, (*c*) and (*e*), are well developed. The crown is supported on two stout divergent subcylindrical fangs ( $\alpha$ ) and ( $\beta$ ), the posterior shews a tendency to be double, so that the fang ( $\gamma$ ) is indicated; and in correlation with this a slight bulge on the internal base of the crown, shews the last vestige of the internal cusp (*f*). This is important in a theoretical point of view. Pls. VI, VIII, XI, PM 3, figs. 1, 9, 10, 11.

The great carnassial, PM 4, consists of a highly compressed cone (*a*), (*b*) of considerable size, with a minute, sometimes obsolete (*d*) on the internal anterior edge, and a long blade-like waved cusp, which is (*c*), (*e*) being absent, (*f*) is much smaller and is less conical than in the hyæna. The crown is supported by a stout trapezoidal compressed fang ( $\beta$ ) posteriorly, ( $\alpha$ ) is small and tapering, generally joined by its whole length to ( $\gamma$ ); whereas in the hyæna these two fangs are divergent. In old hyænas this tooth is much more worn than in old *Felis spelæa*. (Pls. V, VIII, XI, PM 4, figs. 1, 12, 13. The only specimen we have met with of the remaining tooth, M 1, is small. It is very variable in size and form in the lion. (See De Blainville, Ost. *Felis*, Pl. XIV, FL. barb. nub. seneg. cap. ind.)

The Taunton specimen is worn, but what is left of it corresponds closely with the smaller corresponding teeth of lion. It is as will be seen by the two small alveoli in Pl. VIII, set transversely in the jaw immediately behind PM 4. The crown is composed of minute (*a*) and (*f*) with the connecting ridges. The fangs which in the Taunton tooth coalesce into one are usually double, as ascertained from the separate alveoli, these are ( $\alpha$ ) and ( $\gamma$ ). Pls. VIII, XI, figs. 14, 14', 14". The arrangement of the teeth in the jaw, and the angles they make with the palate are extremely variable in all the three large species, there is a tendency in *Felis spelæa* to a more linear arrangement than is often found in the other two forms.

The lower incisors of *Felis spelæa*, I 1, 2, 3, are much like each other in form, and the two smallest are generally near of the same size. They consist of a short slightly curved (*a*), with a well defined (*c*), the crown swells out from the fang ( $\alpha$ ) which is compressed and slightly curved. Pl. XII, figs. 1, 2, 2', 2'', 3, 3', 3''. 1 belongs to a smaller set than 2 and 3.

The crown (*a*) of the lower canine C is conical, slightly curved and compressed, serrated on the posterior edge; the anterior surface is rounded, the anterior serrated ridge passing down the middle of the anterior face, cutting off between it and the posterior ridge a nearly flat surface called the "internal area." This is shewn in Pl. XII, fig. 5. This ends in a slight tubercle (*b*). Small lower canines are distinguished from those of *F. pardus* by the short stout cone, as in the upper teeth. Pls. I, VII, XII, C, figs. 4, 5, 6. This tooth is apt to be worn on the external surface, C on the internal. It is easily to be distinguished from the upper by its possessing but one longitudinal groove on the outer surface of the crown.

We have never found  $\overline{\text{PM } 2}$ , in any of the larger *Felis* though it occurs rarely in the smaller forms.

$\overline{\text{PM } 3}$ , the anterior false molar, is formed by a low, but typically formed crown, feline in character, consisting of (*a*), (*b*) very small, and in many cases almost obsolete; (*c*) is small but distinct, while (*e*) simply appears as a slight bulge on the cingulum, which is well developed posteriorly. It is supported on two large tapering fangs nearly parallel in the large specimens, but widely divergent in the smaller. These varieties are shown in Pls. I, VI, XII, figs. 7, 8, 8', 9.

$\overline{\text{PM } 4}$  is much larger than  $\overline{\text{PM } 3}$  in *Felis spelæa*, lion, tiger, and panther, whereas in *Felis aphanista* and jaguar, these teeth approximate in size. It consists of (*a*) large, (*b*) and (*c*) distinct and rather large, (*e*) is like that in  $\overline{\text{PM } 3}$ , but rather larger. The fangs ( $\alpha$ ) and ( $\beta$ ) are strong, subcylindrical, but tapering and slightly divergent, ( $\beta$ ) sometimes shews signs of being double, thus indicating the existence of ( $\gamma$ ), but there is no trace of the correlated cusp, (*f*). Pls. I, VI, XII, figs. 10, 11, 11', 12.

The sectorial,  $\overline{\text{M } 1}$ , consists of the lobe (*a*) which is highly inclined backwards, so that its posterior sharp ridge is perpendicular, the anterior cutting edge being nearly horizontal, a largely developed (*b*), nearly equalling (*a*) in size, (*d*) is rudimentary, and the cingulum feebly developed; the anterior fang ( $\alpha$ ) is trapezoidal in outline, much compressed, and ( $\beta$ ) is small peg-like, and divergent from ( $\alpha$ ) Both these last teeth are frequently worn externally, thus keeping up the cutting edge of the interior enamel. The corresponding tooth in all species of hyæna always has a more or less developed and sometimes complicated (*c*) and (*e*), while in *Felis* (*c*) is sometimes not to be found at all, and otherwise is extremely small; (*b*) is also comparatively



larger in hyæna than in *Felis* and the cingulum is very evident anteriorly. Pls. I, VI, XIII, figs. 13, 14, 14', 15.

On comparing the above teeth with lion and tiger, we find that there is no constant difference between them. *Felis spelæa* certainly affords teeth which would by a modern hunter be considered gigantic; but others figured in our plates are about the average size of those of lion.

**MILK TEETH.** The upper milk incisors of *Felis spelæa* we have not met with. The upper milk or deciduous canine DC, is considerably larger than any we have met with in young skulls of lion and tiger, and the crown is more regular, though it is essentially the same in form; resembling to a great extent the permanent lower canine, C, except that the "internal area" in DC occupies nearly the whole of the internal surface. The cusp (*b*) is distinct but very small, there are no grooves either on the inside or outside of the tooth. The whole tooth is compressed, and the internal base hollowed out, so that the crown of C has ample space for growth, the fang is usually hollow. Pl. XIII, figs. 2, 2', 5.

The first milk molar DM 2 is a small peg-like tooth closely resembling PM 2 in form, but much smaller. We have met with but one example, that represented in Pl. XIII, figs. 2, 2', that represented in fig 1" in the same plate, is borrowed from 2. It precisely resembles the same tooth in the young lion.

The second milk molar DM 3 is a very peculiar tooth, and can be mistaken for no other that we are acquainted with. It is formed of a compressed (*a*), much higher than the rest of the tooth, (*b*) and (*d*) are both well developed, (*c*) is a long waved blade like (*c*) in PM 4 but more compressed. (*b*), (*c*), and (*d*) are all nearly of the same height, a very sharp ridge runs over the whole of the lobes, giving a sharp

trenchant edge to the whole tooth, deeply concave externally on the plan. Pl. XIII, fig 1". (*f*) is almost rudimentary and flattened as if scraped away. The fangs ( $\alpha$ ) and ( $\beta$ ) are nearly of the same form, rectangular, highly compressed, generally hollow and divergent, and ( $\gamma$ ) also divergent at right angles from the plane of ( $\alpha$ ) and ( $\beta$ ), is cylindrical, and lies entirely on the palate. These are clearly shewn in Pl. XIII, fig. 6. We have many examples of these teeth in our museum, they are all larger and finer than any recent feline teeth we have met with, but otherwise closely resemble those of lion. Pl. XIII, figs. 1, 1', 1'', 6.

DM 4, the last milk molar is a very curious tooth, it performs the office of the small tubercular M 1 of the adult, as DM 3 performs that of PM 4; but it is constructed on the same plan as PM 4, though so different in form and appearance. It consists of a minute (*a*), (*b*) is well developed for the size of the tooth, (*c*) exists, but it is very small, and in very slightly worn recent teeth it is obscure. This part of the tooth is supported by a wide flat fang, resting nearly flat on a slight depression of the alveolar border, this shews a tendency to become double and evidently represents ( $\alpha$ ) and ( $\beta$ ); ( $\gamma$ ) is cylindrical, large, and divergent from ( $\alpha$ ) and ( $\beta$ ), and supports a small but distinct (*f*). The single specimen we have seen is represented in Pl. XIII, figs. 1, 1', 1".

The only milk incisor we have met with is the third and largest of the lower jaw, DI 3. It closely resembles a minute I 1 in form; but is still smaller, and the fang is nearly cylindrical. It is figured in Pl. XIII, fig 3, but the tooth is borrowed from another specimen, No. 45 of Catalogue.

The lower milk canine  $\overline{DC}$  is a curious tooth, we have seen no other fossil tooth like it, but it closely resembles that of the lion ; the crown is highly compressed and curved, and sharply pointed, though broad at the base, convex externally, and not very sharp posteriorly ; it is slightly concave internally, and a strong ridge runs from the summit on the anterior internal edge, to a large and distinct cusp (*b*), in the internal anterior base ; the fang is highly compressed and excavated internally, Pl. XIII, figs. 3, 4, 7.

The first milk molar  $\overline{DM}$  3 resembles a compressed  $\overline{PM}$  4 in shape and composition. The cones (*a*), (*b*), (*c*), and (*e*) being all present, connected by a sharp ridge, (*a*) being much the largest and highest. The fangs are frequently very large and subcylindrical, and highly divergent. Pl. XIII, figs. 3, 4, 8.

The last milk molar  $\overline{DM}$  4 resembles  $\overline{PM}$  4 in composition, but the sectorial  $\overline{M}$  in form. (*a*) and (*b*) are very like (*a*) and (*b*) in  $\overline{M}$  ; but (*a*) is proportionally larger, (*d*) is obsolete, (*c*) is small but distinct, and a strong bulge on the base represents (*e*). The fang resembles those of  $\overline{M}$ , but (*β*) is proportionally larger, and both are more compressed. It does not differ essentially from that of lion, but is larger.

Generally speaking this large size of the milk teeth of *Felis spelæa* might be considered to indicate the specific difference of the fossil and recent lions ; but all the young lions' skulls that we have examined, are, as far as we can make out, those of animals which have been bred in captivity. Our experience of young animals bred under such unnatural conditions, would tend to shew that the structure of many parts would be stunted in its growth.

We think it probable that the skulls of young wild lions would show a very different result, at all events we do not see any reason for considering the size alone of the milk teeth, evidence of other than varietal difference between the fossil and recent animal.

## II.

### Catalogue of Bones of *Felis Spelæa*.

#### SKULLS.

##### 1st.—*Adult*.

No.

- 1 Pls. I, X. Skull of large size, young adult animal, Sandford Hill Cave, from Mr. Beard's collection, cleaned and re-articulated by Mr. Bidgood. It retains a small part of each nasal in situ (15), a large part of the right palatine (20), the greater part of the right maxillary, and a small part of the left (21), a part of the right inter-maxillary (22), the large posterior premolars PM 4, and a part of the right canine C, both malars (26), with the left squamosal (27), and a large part of the right, so that the proportions of the zygomatic arch are clearly seen. The frontals (11) are nearly perfect, but the supraorbital processes are abraded, the left tympanic bulla is broken, and the right almost gone, the basisphenoid (5), is all but gone, and only the lower and posterior portions of the alisphenoid are left, attached to the lower part of the orbitosphenoid and squamosals; both mastoids are imperfect; the basioccipital is present, but the exoccipitals (2) are abraded; the supra-occipital is gone, and of the paroccipitals only the left fossa remains. The petrosals are in situ and perfect. The lower jaws represented in Pl. I, figs. 1, 2, are believed to belong to this skull; they are nearly perfect, wanting only the articular condyles, the extremities of the angles, and part of the left coronoid process. The malleus, Pl. X, figs. 2, 3, which is nearly perfect, was extracted from the skull; to it also with much probability belong many other bones of the skeleton, these are marked in the Museum with a red star, and in the catalogue by a letter A.

2—3 Pl. VI, VII, VIII, IX, fig. 1. A smaller skull of an aged animal, which in size, as in every other respect, precisely corresponds with the cranium of an ordinary lion. It lay for many years in a broken condition in a box in the Museum, after its purchase with the rest of Mr. Williams' collection. Mr. Bidgood re-articulated it; and when Mr. Beard's collection was purchased, the lower jaws figured (3) in Pl. VI, were found to fit it so exactly that we have no doubt that they originally belonged to it. These were from Sandford Hill Cave, we therefore give that as the locality of the skull. It is by far the most perfect skull of the animal that has been found in England. It retains a minute portion of right nasal (15) in situ; small portions of the palatine (20), shewing the "posterior palatine foramen," Pl. VIII, (*j*); the maxillaries with their dentition, except the small transverse molar M 1, the alveoli, however, of these are very clearly seen. The inter-maxillaries (22) are perfect, but the teeth are gone; the right I 3 was diseased and lost during life. The right malar (26) and squamosal (27) are perfect, and the left nearly so. The cribriform and central plates of the ethmoid (18) are present, the former shewing like a plate of saracenic tracery when seen through the foramen magnum. The presphenoid (9), and orbitosphenoid (10) are nearly perfect; the superior portion of both frontals (11) are nearly perfect; but the orbital portions are much broken. The right tympanic (28) is perfect, but the bulla of the left is broken; the articular part of the squamosal, Pl. VIII (*h*), is perfect on both sides, and so are the lower jaws Pl. VI, with the exception of portions of the coronoid processes, and part of one of the condyles. The basisphenoid (5), alisphenoid (6), parietals (7), mastoids (8), basioccipital (1), exoccipital (2), supraoccipital (3), paroccipitals (4), and Wormian (5) are all perfect; and small parts of the lacrymals (73) are attached to the frontals and maxillaries. The petrosals appear to be perfect; but they can only be partially seen on the internal or cranial surface. Of the dentition of the lower jaw, the incisors only I 1, 2, 3, right and left are wanting. Two pieces of the palate, one shewing the posterior cusp, which has been stated to be characteristic of the lion; and the other, with part of the vomer attached are mounted with the skull, 2, a.

- 4 Maxillaries, inter-maxillaries, and rami of the lower jaw of very large animal. Sandford Hill Cave. Mr. Beard's collection. The maxillaries figured in Pl. XI, fig. 1. These specimens shew the entire dentition of the animal except



the lower incisors, I 1, 2, 3 right and left, I 1, PM 2 right and left, and M 1 right and left. It may be doubtful if the lower and upper jaws belong to one animal. It may be remarked that the alveoli of PM 2 shews that the tooth was in this instance bifanged.

- 5 Portion of right maxillary with PM 3, 4, and C. Bleadon, Beard.
- 6 Portion of right maxillary and inter-maxillary with PM 3, I 1, 3. Williams.
- 7 Portion of left maxillary and inter-maxillary with PM 3, C. Bleadon, Beard.
- 8 Portion of left maxillary and inter-maxillary with PM 4. Bleadon, Beard.
- 9 Right inter-maxillary with I 1, 2, 3. Williams.
- 10 Portion of right maxillary with PM 3. Bleadon, Beard.
- 11 „ right maxillary with C. Williams.
- 12 „ left maxillary with C. Bleadon, Beard.
- 13 „ very large maxillary with C. Williams.
- 14 „ maxillary with PM 3 in breecia. Bleadon, Beard.
- 15 „ right maxillary with PM 4. Bleadon, Beard.
- 16 Large part of gigantic right lower jaw, this specimen agrees in the position of the ramal process with, while it surpasses in depth and size the figure of *Felis atrox* alluded to above, p. 106. It retains PM 3, 4, and a portion of M.
- 17 Portion of right lower jaw with PM 3, 4. Bleadon, Beard.
- 18 „ right lower jaw with PM 4, M. Bleadon, Beard.
- 19 Fragments of left lower jaw in breecia, with PM 3, 4, M. Williams.
- 20 Portion of left lower jaw with PM 3, 4. Williams.
- 21 „ left lower jaw with PM 3, 4. Williams.
- 22 Fragment of left lower jaw with PM 3. Williams.
- 23 Portion of right lower jaw with PM 3, 4, M. Williams.
- 24 Fragment of right lower jaw with PM 4. Bleadon, Beard.
- 25 „ left lower jaw with C. Williams.
- 26 „ left lower jaw with C. Williams.

- 27 Fragment of right lower jaw of a young animal just cutting the adult teeth with  $\bar{M}$ . The crown of this tooth is very fine.
- 28 Pl. IX, figs. 2, 3. Left squamosal of gigantic animal. Bleadon, Beard.

## SKULLS.

### *2nd.—Young, with Milk Dentition.*

- 29 <sup>7</sup> Pl. XIII, figs. 1, 1', 1''. Left maxillary of young animal (B), shewing  $\underline{DM\ 3, 4}$ ,  $\underline{PM\ 2, 3, 4}$ , as germs, and alveoli of  $\underline{DM\ 2}$ , &  $\underline{DC}$ . The figure of the crown of  $\underline{DM\ 2}$  in fig. 1'' is borrowed from (30). Williams, probably from Hutton Cave.
- 30 Pl. XIII, figs. 2', 2, portion of left maxillary of young animal with part of  $\underline{DM\ 3}$ ,  $\underline{DM\ 2}$ , &  $\underline{DC}$ . This is the only example of  $\underline{DM\ 2}$  we have met with. Bleadon, Beard.
- 30<sup>a</sup> Left inter-maxillary. Bleadon, Beard.
- 30<sup>b</sup> Left inter-maxillary. Williams.
- 31—32 Upper jaws of very young animal, with  $\underline{DM\ 3}$ ,  $\underline{DC}$ . Williams. The milk molars in these maxillaries were named by Dr. Falconer. 31 is figured in Pl. XIII, fig. 6, in the internal aspect.
- 33 Right upper jaw of very young animal with  $\underline{DC}$ . Sandford Hill Cave, Beard.
- 34 Crushed right upper jaw of young animal with  $\underline{DM\ 3}$ , and trace of  $\underline{C}$  and  $\underline{PM\ 3}$ , as germs. Bleadon, Beard.
- 35 Fragments of  $\underline{DM\ 3}$ . Bleadon, Beard.
- 36  $\underline{DM\ 3}$  named by Dr. Falconer. Williams.
- 36<sup>a</sup>  $\underline{DM\ 3}$  with solid fangs. Hutton, Beard.
- 37—38—39—40 Four upper milk canines  $\underline{DC}$ . Williams. One of these is figured in Pl. XIII, fig. 5, on the inner aspect, shewing the hollow on the fang for the admission of the crown of the permanent tooth  $\underline{C}$ .
- 40<sup>a</sup> Upper canine. Bleadon, Beard.
- 41 Pl. XIII, fig 3, 3'. Right lower jaw of young animal (B) with  $\underline{DM\ 3, 4}$ , the fang of  $\underline{DC}$ , and a trace of  $\bar{M}$ . The

<sup>7</sup> This with the lower jaw and several other bones may well have belonged to the same animal we will call this skeleton (B).

figure is completed by copying  $\overline{DI\ 3}$  from (45). In other respects the ramus is all but perfect, and in form closely agrees with that of a lion five months old; but it is much larger than that of any lion of corresponding age we have met with. Williams.

- 42 Left ramus of lower jaw (B). It has lost the milk tooth, and has only trace of the germs of the permanent dentition visible. Hutton, Beard.
- 43—44 Probably a pair. Right and left lower jaws of very young animal. The right jaw figured in the inner aspect in Pl. XIII, fig. 4. They retain both milk canines and both right deciduous molars,  $\overline{LDC}$ ,  $\overline{RDC}$ ,  $\overline{DM\ 3, 4}$ . Williams. These may belong to the same animal as (31, 32).
- 45—46 Pair of partially crushed lower jaws of young animal, with  $\overline{DC}$ ,  $\overline{DM\ 3, 4}$ , on both sides, and right  $\overline{I\ 3}$ , figured in Pl. XIII, fig. 3. The fangs also exist of  $\overline{DI\ 1, 2}$ , and germs of  $\overline{I\ 1, 2}$ ,  $\overline{M}$ , &  $\overline{C}$ . This is an important specimen as fixing the connexion between the permanent and milk dentition of the animal and as exhibiting the only known milk incisor. Bleadon, Beard.
- 47—48 Portions of crushed rami, a pair, with portions of milk and permanent dentition. Bleadon, Beard.
- 49 Portion of left ramus, with  $\overline{DM\ 3, 4}$ . Bleadon, Beard.
- 50 Fragment of right ramus, with  $\overline{DM\ 3, 4}$ . Williams.
- 51 „ of right ramus, with  $\overline{DM\ 3}$ . Bleadon, Beard.
- 52 „ left lower jaw, with  $\overline{DM\ 4}$ . Bleadon, Beard.
- 53 Milk molar 3, of large size, figured in Pl. XIII, fig. 8. Williams.
- 54—55—56 Three milk lower canines,  $\overline{DC}$ . 54 figured on inner aspect, to exhibit the peculiar cone at the base of crown. Williams.

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#### *Adult Dentition.*

- 57 Second right incisor. Bleadon, Beard. Perfect in crown.
- 57<sup>a</sup>—58—59 Three upper adult incisors. 57<sup>a</sup> is a very perfect crown, figured in Pl. XI, figs. 4, 4', 4''. It is a left tooth. All are from Bleadon, Beard. The first and second incisors figured in Pl. XI, figs. 1, 2, are from Col. Wood's collection. Ravens Cliff Cave, Gower.
- 59<sup>a</sup> Third upper right incisor, much worn. Williams.

- 59<sup>b</sup> Third upper incisor. Williams.
- 60 Large canine, C, left side. Wookey Hyæna Den, from Dr. Boyd. This equals in size the large French canine figured by De Blainville, *Ost. Felis*, Pl. XV, but is much surpassed in size by a canine recently found by a pupil of Professor Morris, at Crayford, in the Thames Valley, a cast of which has been presented to the Museum by Mr. Boyd Dawkins. Figured on internal aspect, Pl. XI, fig. 6.
- 61 Small canine, C, right side, belongs to the same jaw as 72, figured in Pl. XI, fig. 7. Smaller canines than this have occurred to us; two belonging to Col. Wood, from Gower; one from Kent's Hole in the British Museum, and one in our own Museum, which has been recently cleaned from plaster. These shew that some fossil teeth undistinguishable in form from those of the largest *Felis spelæa*, were as small as those of the smallest existing lion.
- Fig. 5 of Pl. XI is from a perfect tooth, belonging to Col. Wood from Ravens Cliff, Gower.
- 62—63—64—65—66 Upper canines of various sizes. These as well as 61 belonged to Mr. Williams, we have reason to believe that they are from Bleadon.
- 67—68—69—70 Upper canines of various sizes from Bleadon. Mr. Beard's collection.
- 70<sup>a</sup> Germ of upper canine of full size, right side. Sandford Hill Cave, Mr. Beard.
- 71 Fragment of upper jaw with PM 2, left side, also a part of PM 3. This is the only specimen of PM 2 of large size that we have met with. The smaller size occurs in the skull 2 on both sides, and the alveoli in the maxillaries No. 4, and in three or four other specimens; so that there is no doubt that this tooth occurs frequently in *Felis spelæa* of all sizes, though it is sometimes absent, as in other large *Felēs*, it probably also varies in form considerably. Figured in Pl. XI, figs. 8, 8'.
- 72 Fragment of upper jaw with PM 3, which belongs to the same jaw as the tooth (61). Williams. Small, not larger than those of moderately sized lions. Figured in Pl. XI, fig. 11, right side external aspect.
- 73 PM 3 ordinary large size. Bleadon, Beard. Figured in Pl. XI, fig. 10, right side, internal aspect.
- 74 PM 3. Bleadon, Beard.
- 75 Germ of PM 3. Bleadon, Beard.
- 76—77 PM 3. Williams, probably Bleadon.

Fig. 9, Pl. XI, is from a very large tooth from Wookey Hyæna Den, in possession of Mr. Boyd Dawkins.

- 78) Premolar 4. PM 4, figured in Pl. XI, fig. 12, left side,  
external aspect. Largest we have met with.
- 79) PM 4 ordinary large size, figured in Pl. XI, fig. 13, right  
side internal aspect.
- 80) PM 4 a germ. These three teeth belonged to Mr. Wil-  
liams, probably from Bleadon.
- 81 PM 4. Bleadon, Beard.
- 81<sup>a</sup> PM 4, germ. Bleadon, Beard.
- 82 The only known specimen of M, the small transverse  
tubercular molar of *Felis spelæa*. The alveoli, however,  
which were very shallow exist in all specimens which are  
sufficiently perfect to shew them, figured in Pl. XI, figs.  
14, 14', 14''. It exactly resembles the corresponding  
tooth of lion.

- 83 First incisor lower jaw, I 1, small and worn. Bleadon,  
Beard. Left side.
- 84 I 1, large and perfect, left side. Sandford Hill, Beard.
- 85 I 2, right side, large and perfect. Bleadon, Beard.
- 86 I 3, left side, large and perfect. Williams' collection.

The incisors figured in Pl. XII are from the skulls 1 and 2.

- 86<sup>a</sup> Third right incisor. Williams.
- 87 Largest lower canine we have met with, C, right side.  
Williams' collection. Figured on external aspect Pl. XII,  
fig. 4.
- 88 C, right side, average size. This may be compared with  
the canine figured in Pl. XI, fig. 6, to shew the difference  
between the upper and lower canines. Figured in Pl.  
XII, fig. 5, internal aspect. Sandford Hill, Beard.
- 89 C, small size. This shews the very small size of some of  
these teeth, and the nature of the wear in aged animals,  
which is on the outside of the lower and inside of the  
upper teeth. Figured in Pl. XII, fig. 6, external aspect.  
Williams.
- 91—92—93—94—95—96—97—97<sup>a</sup>—97<sup>b</sup> Lower canines C,  
varying in size from those of ordinary lion to those of the  
large *Felis spelæa*. Williams, probably all from Bleadon.
- 98 Very small C. Sandford Hill, Beard. It is seldom or  
ever, that we find lion or tiger with smaller C than this.



It differs in no respect except size from the largest teeth of *Felis spelæa*, but differs much from those of *Felis pardus*.

- 99 Lower premolar 3.  $\overline{\text{PM}}\ 3$ , large size, reversed in plate. Figured in Pl. XII, fig. 7, left side, external aspect. Bleadon, Beard.
- 100  $\overline{\text{PM}}\ 3$ , average size, right side. Williams. Internal and superior aspects figured in Pl. XII, fig. 8, 8'. Williams.  
 $\overline{\text{PM}}\ 3$ , very small, with divergent fangs, left side, figured in Pl. XII, fig. 9, is from a specimen found in Wookey Hyæna Den by Mr. Boyd Dawkins.
- 101  $\overline{\text{PM}}\ 3$ . Williams. Right.
- 102  $\overline{\text{PM}}\ 3$ . Bleadon, Beard. Left.
- 103  $\overline{\text{PM}}\ 3$ . Bleadon, Beard. Right.
- 103<sup>a</sup>  $\overline{\text{PM}}\ 3$ . Left, small. Williams.
- 104 The largest  $\overline{\text{PM}}\ 4$  from the lower jaw that we have met with, right side. Williams, probably from Bleadon. External aspect figured in Pl. XII, fig. 10.
- 105 Large left  $\overline{\text{PM}}\ 4$ . Bleadon, Beard. Internal and superior aspects figured in Pl. XII, figs. 11, 11'.
- 106 Very small  $\overline{\text{PM}}\ 4$ . Bleadon, Beard. Right side, the internal aspect reversed is figured in Pl. XII, fig. 12; but the matrix with which the fangs are encumbered is not represented.
- 107—108—109—110—111—112  $\overline{\text{PM}}\ 4$  of various sizes, probably all from Bleadon. Williams' collection.
- 113—114—115—116—117  $\overline{\text{PM}}\ 4$  of various sizes. From Bleadon Cave. Beard's collection.
- 117<sup>a</sup>—117<sup>b</sup>  $\overline{\text{PM}}\ 4$ . Williams.  
The large right lower molar or carnassial  $\overline{\text{M}}\ 1$ , figured in Pl. XII, fig. 13, is from a much worn, and therefore very aged tooth, found in Wookey Hyæna Den by Mr. Boyd Dawkins.
- 118  $\overline{\text{M}}\ 1$  from Bleadon Cave. Left side, large size. Internal and superior aspects figured in Pl. XII, fig. 14, 14'.  
Figure 15 of the same plate is from a very small but aged left lower molar  $\overline{\text{M}}\ 1$ , found in Wookey Hyæna Den by myself. It is figured on the internal aspect.
- 119—120—121—122—123  $\overline{\text{M}}\ 1$ , of various sizes, but none very small. Probably from Bleadon. Williams' collection.
- 124  $\overline{\text{M}}\ 1$ , large and fine. Bleadon, Beard.
- 125  $\overline{\text{M}}\ 1$ , germ. Bleadon, Beard.

## VERTEBRÆ.

- 126 Atlas (A). This wants the greater part of the transverse processes, but is otherwise in good condition. It is much larger than those of any lion or tiger we have met with, though it closely resembles them in general form. We have never met with the two minute notches on the anterior aspect, on the outer and upper edge of the prezygapophyses, in any other *Felis*. In our figure Pl. XIV, fig. 1, the left transverse process is restored in outline from a German specimen of somewhat smaller size, belonging to Sr. Philip Egerton, found in the cave at Gailenreuth. We may here remark that the atlas of *Felis*, when of large size, may be at once distinguished from that of any other known animal by the great projection of the prezygapophysis, (*az*, fig. 1') beyond the transverse processes. This fine fossil was found in Sandford Hill Cave by Mr. Beard. Pl. XIV, fig. 1 anterior aspect; 1', superior aspect; 1'', posterior aspect.
- 127 The odontoid process and prezygapophyses of the axis (A). This is distinguished from the corresponding bone of the bear by its great length, and by other minute characters which can be better learnt by inspection than by the most elaborate description. It closely resembles the same bone in lion, in all except size. Sandford Hill, Beard.
- 128 Fourth cervical of large size. Bleadon, Beard.
- 129 Fourth and fifth cervical, cemented together in breccia, very imperfect. Bleadon, Beard.
- 130 Fifth cervical, somewhat crushed, of very large size. Bleadon, Beard.
- 131 Fifth cervical, small, about the size of an ordinary lion. Bleadon, Beard.
- 132 Sixth cervical (A). It varies from the ordinary type of *Felis* in the greater amount of inclination of the zygapophysial articulations, and in the more open curve of the external face of the neurapophyses, seen in figs. 2'', 2''', Pl. XIV. We have found vertebræ of jaguar resembling this bone exactly in form, and an approach to it in tiger. These characters vary to some extent in all the *Felidæ*; and the other specimen we have of the sixth cervical vertebra of *Felis spelæa* exactly resembles the ordinary sixth cervical of lion. We are consequently

disposed to consider this as simply a variety of the ordinary form of the bone in *Felis spelæa*. Pl. XIV, figs. 2, 2', 2'', 2'''.

133 Sixth cervical, imperfect. Bleadon, Beard.

134 Seventh cervical, imperfect, in breccia. Bleadon, Beard.

135—136 First dorsal vertebræ. Bleadon, Beard. These exactly agree with those of the lion in form, but are rather larger.

137 Second dorsal (A). This is a very fine and perfect fossil. It exactly agrees with a second dorsal vertebra in a mounted specimen of lion in the College of Surgeons in every respect, except that the spine is considerably longer in the fossil. It differs from the ordinary form of the larger feline second dorsals, in that the anterior edge of the spine forms a nearly straight line, whereas it is generally strongly sigmoid; the lion's vertebra above quoted, and that of a jaguar in my own possession has this character exactly as in the fossil. The hollow at the back of the spine is also not usual, but it is found occasionally in all the larger *Felis*. Sandford Hill, Beard. Pl. XV, figs. 1, 2, 3.

These two vertebræ may be considered to form in *Felis* a class by themselves, as they much resemble the cervical vertebræ in form, in consequence of the great width between their zygapophysial articulations, they may be called cervico-dorsals.

138 Fourth dorsal. Bleadon, Beard. Imperfect, but recognisable; it may be the fifth. When the vertebræ are imperfect, and the series incomplete, one cannot pronounce with certainty as to the exact position of the bone in all cases.

138<sup>a</sup> Fifth dorsal, centrum only. Bleadon, Beard.

139 Seventh dorsal. Bleadon, Beard. There is sufficient left of this bone to pronounce with tolerable certainty as to its position. Pl. XVI, figs. 1, 1'.

139<sup>a</sup> Eighth dorsal, imperfect. Bleadon, Beard.

140 Ninth dorsal. Probably from Bleadon, Williams. Very large.

140<sup>a</sup> Tenth dorsal, young, nearly adult animal. Sandford Hill, Beard.

- 141 Eleventh dorsal. Bleadon, Beard. This vertebræ is easily known by the shortness of the spine, and by the peculiar position of the postzygapophyses (*pz*) on the base of it, as well as by the size of the anapophyses, (*a*), and metapophyses, (*m*). It is a narrower bone than the corresponding vertebra of the bear, but the fossils are stouter than the generality of recent bones.

The figured specimen is nearly perfect, and very characteristic. Pl. XVI, figs. 2, 2', 2'', 2'''.

- 142—143 Eleventh dorsal. Bleadon, Beard. This exactly agrees with the above.

- 144—Eleventh dorsal. Bleadon, Beard. Very imperfect.

These from the third to the eleventh may be called true dorsals.

- 
- 145 Thirteenth dorsal of young animal, without epiphyses, and abraded; the zygapophyses are perfect. Sandford Hill, Beard. This form is sometimes called dorso-lumbar.

- 
- 146 Second lumbar, nearly perfect, and characteristic, (A). Figured in Pl. XVI, figs. 3, 3', 3'', 3'''. Sandford Hill, Beard.

- 147 Second lumbar, young, without epiphyses, tolerably perfect. Sandford Hill, Beard.

- 148 Second lumbar, centrum only, old and large. Bleadon, Beard.

- 149 Third lumbar, a very short specimen, tolerably perfect. Bleadon, Beard. Many of the lumbar vertebræ of *Felis spelæa* rather resemble the average of those of tiger than of lion, but this is typically leonine.

- 150 Third lumbar, centrum only, small thin specimen. Bleadon, Beard.

- 151 Fourth lumbar, without epiphyses, young animal. Sandford Hill, Beard.

- 151<sup>a</sup> Fourth lumbar, centrum. Williams.

- 152 Fifth lumbar, without epiphyses, large young animal. Sandford Hill, Beard.

- 153 Sixth lumbar, without epiphyses, very large young animal. Sandford Hill, Beard.

- 154 Sixth lumbar, large and fine, but somewhat imperfect. Bleadon, Beard.

These two sixth lumbar differ much in the width of the postzygapophyses. 154 is probably most typical in this respect, as it is nearest the form of those of the average living *Felis*.

- 155 Seventh lumbar, large but imperfect. Bleadon, Beard.
- 155<sup>a</sup> Seventh lumbar, large and long, but imperfect. Bleadon, Beard.
- 156 Centrum of lumbar vertebræ, position uncertain.



- 157 Part of the second and the whole of the third sacral vertebræ. The only British specimen of this important part of the animal we have met with; it corresponds exactly with that of the ordinary lion in form, but as usual it is larger. (A). Figured in Pl. XXVI, fig. 4.



- 157<sup>a</sup> Second caudal, without epiphyses, (A). Sandford Hill, Beard.
- 158 Third caudal. Bleadon, Beard.
- 159 Fourth caudal. Bleadon, Beard. Figured in Pl. XVI, figs. 4, 4', lower and posterior aspects.
- 160 Fifth caudal. Bleadon, Beard.
- 161 Fifth caudal. Sandford Hill, Beard. Young adult.
- 162 Sixth caudal. Bleadon, Beard.
- 163—164—165 Sixth caudals of various sizes. Bleadon, Beard.
- 166 Seventh caudal. Bleadon, Beard. Fine and perfect. Figured in Pl. XIV, figs. 3, 3', 3'', 3''', upper and side aspects, and both ends.
- 167—168—169 Seventh caudals. Bleadon, Beard. Various sizes.
- 170 Eighth caudal. Bleadon, Beard.
- 171—172—173—174—175—175<sup>a</sup>—175<sup>b</sup> Eighth caudals, various sizes. Bleadon, Beard. 175<sup>a</sup> and 175<sup>b</sup> are apparently bones of very aged and somewhat diseased animals, particularly 175<sup>b</sup>.
- 176 Eighth caudal, young adult. Sandford Hill, Beard. (A).
- 177 Ninth caudal. Bleadon, Beard. Figured in Pl. XVI, fig. 5, upper aspect.



- 178 Very large }  
 179 Large } Ninth caudals. Bleadon, Beard.  
 180 Small }
- 181 Tenth caudal of moderate size. Bleadon, Beard. Figured in Pl. XVI, fig. 6, inferior aspect.
- 182 Tenth caudal, very large. Bleadon, Beard. Figured in Pl. XVI, figs. 7, 7', 7'', upper aspects and both epiphyses.
- 182<sup>a</sup> Tenth caudal of very large size. Williams.
- 183 Eleventh caudal. Bleadon, Beard.
- 184 Twelfth caudal, moderate size. Bleadon, Beard. Figured in Pl. XVI, fig. 8, left side.
- 185 Twelfth caudal, large. Bleadon, Beard.
- 186 Thirteenth caudal, large. Bleadon, Beard.
- 187—188 Thirteenth caudals. Bleadon, Beard.
- 189 Fourteenth caudal, moderate size. Bleadon, Beard. Figured in Pl. XVI, figs. 9, 9', 9'', upper aspect and both epiphyses.
- 190 Fifteenth caudal, anterior half. Bleadon, Beard.
- 191 Sixteenth caudal. Bleadon, Beard.
- 192 Seventeenth caudal. Bleadon, Beard.
- 193 Eighteenth caudal. Bleadon, Beard.
- 194 Nineteenth or Twentieth caudal. Bleadon, Beard.
- 195—196 Two small caudals from near the extremity of the tail, say 22 and 23; but it may be doubted if these belong to *Felis spelæa*, though they exactly resemble those of large lion.

## STERNUM.

- 197 Sterneber. Bleadon, Beard. Figured in Pl. XVI, figs. 10, 10'.
- 198—199—200—201 Four sternebers. Bleadon, Beard. These sternebers are certainly feline, but we find so much variation in the form of these bones in the recent *Felis* that we cannot positively assign the position of each bone with exactness.
- 201<sup>a</sup> Sterneber of very young animal. Hutton, Beard.

## LIMBS.

1st.—*Fore Limb.*

- 202 Scapula. (A.) Figured in Pl. XVII, figs. 1, 2, external and articular aspects. Sandford Hill, Beard. Right side.
- 203 Scapula, portion of. Sandford Hill, Beard. The pair of 202. (A.) Left side.
- 204 Scapula. Bleadon, Beard. The articular portion and a very short piece of the rest of the bone, left side.
- 205 Scapula. Young animal from Hutton. Right side. This probably belongs to the same skeleton as the maxillary and lower jaws 29, 41, 42. (B.)
- 205<sup>a</sup> Clavicle, imperfect, but quite recognisable. Williams.
- 206 Left humerus, proximal articular portion. Bleadon, Beard. Figured in Pl. XVIII, fig. 1, upper part.
- 207 Left humerus, distal end. Bleadon, Beard. Figured in Pl. XVIII, fig. 1, lower part.
- 208 Left humerus, portion of shaft towards the distal end. Bleadon, Beard. Figured in Pl. XVIII, fig. 1, middle part. This is a composite figure, founded on that of the nearly perfect humerus by Schmerling, Oss. foss. de Liege, To. II, Pl. XV, fig. 2. The outline of this is copied in light tint, on this is placed the outline of 208 in somewhat darker tint, this most closely coincides with the Belgian outline. On this again is placed the drawing of a much smaller and compressed shaft of a feline humerus from Oreston Cave, now in the Bristol Museum. The two articulations are from 206 and 207, the former closely coinciding with, and the latter a little smaller than the Belgian specimen. Thus a posterior aspect of the entire bone is presented as accurate as our means would allow of. Figure 2 of this plate is the anterior aspect of the distal end of a humerus from the Larkhall gravel near Bath, in the possession of the Rev. H. H. Winwood.
- 209 Humerus, distal articulation, large size. Sandford Hill, Beard. Pl. XVIII, fig. 3. (A.)
- 210—211 Lower part of the shafts of a pair of humeri from Sandford Hill, Beard. The preservation of the substance of these bones is most remarkable, they exactly resemble recent bones; but we have never met with the bones of recent *Felis* so large. They are therefore probably genuine.

- 212 Distal portion of right humerus. Bleadon, Beard.
- 213—214—215 Two right, and one left, humeri, distal portions. Bleadon, Beard.
- 216 Left humerus, distal portion. Probably from Bleadon, Williams.
- 217 Left humerus of very young animal, without epiphyses. Hutton, Williams. Pl. XXII, fig. 1, posterior aspect. (B.)
- 218 Right humerus, distal portion, pair to 217. Hutton, Beard. (B.)
- 219 Left ulna, proximal portion. Sandford Hill, Beard. Figured half natural size, radial aspect, Pl. XI, fig. 8; natural size, internal aspect, Pl. XXVI, fig. 2. (A.)
- 220 Pair to 219, small part of humeral articulation. (A.) Sandford Hill, Beard.
- 221—222 Part of proximal ends of pair of ulnæ, in the same state of preservation as the humeri, 210, 211. Sandford Hill, Beard.
- 223 Large ulna, proximal half. Figured half natural size, Pl. II, fig. 5, anterior aspect; 6, radial aspect; 7, internal aspect.
- 224—225—226—227—228—229—230—231—232—233—234—235 Twelve ulnæ of various sizes, from 224 which is of large size, to 235 which is not larger than the bone of an ordinary lion, proximal portions. Bleadon, Beard.
- 235<sup>a</sup> Proximal end of right ulna. Williams.
- 236 Shaft of right ulna. Bleadon, Beard.
- 237 Left ulna, without epiphyses, of young animal. Figured in Pl. XXII, figs. 2, 3, radial and internal aspects. Hutton Cave, Beard. (B.)
- 238 Pair to 237. Hutton Cave, Williams.

Fig. 9 in Pl. II is a representation of a small ulna, half the natural size, from Wookey Hyæna Den, in the possession of Mr. Boyd Dawkins. It exactly resembles in every respect that of an ordinary lion.

The only example of a complete ulna of *Felis spelæa* we have met with, is one found among bones which once belonged to Dr. Falconer. It is probably from the Crayford brick-earths. It is now in the British Museum. It is of the largest size.

- 239 Perfect radius. Figured half natural size, anterior aspect, in Pl. II, fig. 1; proximal, fig. 2; distal, fig. 3;

and of the natural size on the ulnar aspect, Pl. XXVI, fig. 1. Sandford Hill, Beard. (A.)

- 240 Proximal and distal portions of the pair to 239.
- 241 Proximal end of small radius, corresponding in size and figure with that of the ordinary lion. Figured half natural size in Pl. II, fig. 4. Bleadon, Beard.
- 242—243—244—245 Proximal ends and portions of shafts of four radii. Bleadon, Beard.
- 246—247—248 Distal ends of three radii. Bleadon, Beard.
- 248<sup>a</sup> Proximal end of right radius. Williams.  
 These eight vary in size, and form a series with the two preceeding them.
- 249 Distal end of radius of very young animal. Bleadon, Beard.
- 250 Proximal end of radius of very young animal. Bleadon, Beard.
- 251 Scaphoido-lunare, right. It is of large size, and if compared with 152, which exactly resembles in every respect that of ordinary lion, it will be seen that it differs from it by being somewhat thicker, but this character is found to be variable in recent animals, though not to the extent shewn in the fossil. Figured in Pl. XX, figs. 1, 1', front and inferior aspects. Sandford Hill Cave, Beard. (A.)
- 252 Scaphoido-lunare, left, small size. Figured in Pl. XX, fig. 2. Bleadon, Beard.
- 253—254—255 Scaphoido-lunare of various sizes. Mounted so as to shew the different aspects. Bleadon, Beard.
- 256 Scaphoido-lunare. Sandford Hill, Beard.
- 257 Scaphoido-lunare of large size, left. Mounted with paw. Bleadon, Beard.
- 258 Right unciform, figured in Pl. XX, figs. 5, 5'. Bleadon, Beard.
- 259 Left unciform. Bleadon, Beard.
- 259<sup>a</sup> Unciform. Sandford Hill, Beard. (A.)
- 260 Right pisiform. Figured in Pl. XX, fig. 3, carpal aspect. Bleadon, Beard.
- 261 Left pisiform. Figured in Pl. XX, fig. 4, ulnar aspect Sandford Hill, Beard. (A.)
- 262 Left pisiform. Mounted with paw. Bleadon, Beard.

- 263 Left pisiform, small. Bleadon, Beard.
- 264 First right metacarpal. Bleadon, Beard. Pl. XXI, fig. 1.
- 265 First left metacarpal. Mounted with paw. Rather small. Bleadon, Beard.
- 266—267 First right metacarpal. Bleadon, Beard.
- 268—269—270—271 Second, third, fourth, and fifth metacarpals of right paw, all exactly matching. (A.) They are remarkable for their stoutness in proportion to their length. The set is figured in Pl. XXI, figs. 2, 3, 4, 5. The fourth shows a variation of the proximal articulation, the usual form is shewn in Pl. XX, fig. 6, No. 274. Sandford Hill, Beard.
- 272—273—274—275 Second, third, fourth, and fifth metacarpals of left paw. Mounted with paw. Proximal articulation of 274, figured in Pl. XX, fig. 6. Bleadon, Beard.
- 276—277—278—279 Second metacarpals all of large size, proximal portions. Bleadon, Beard.
- 280 Third metacarpal, proximal half. Bleadon, Beard.
- 281—282—283—284—285—285<sup>a</sup> Fourth metacarpals, proximal portions, some of them are of size of ordinary lion. Bleadon, Beard.
- 285<sup>b</sup> Fourth left metacarpal. Williams.
- 286—287—288—288<sup>a</sup>—289—289<sup>a</sup>—290—291—292 Fifth metacarpals of various sizes. 286 perfect, of the rest more or less of the distal portion gone. Bleadon, Beard.
- The figure in Pl. XXI, fig. 7, is of a very small specimen found in Wookey Hyæna Den, by Mr. Boyd Dawkins. Internal aspect.
- 292<sup>a</sup> Fifth metacarpal, left side. Williams.
- 293—294 Third metacarpals, wanting the distal ends. Sandford Hill, Beard.

The large third metacarpal and metatarsal figured in Pl. XIX, figs. 6, 7, are from Crayford, in the possession of Dr. Spurrell. They exceed in size any of the Somerset specimens, and are more slender, particularly about the proximal articulation, and more curved than usual for large specimens. Great variation, however, is found to exist in these particulars in both lion and tiger. We may, therefore, with much probability assume that the same may have been the case in the ancient European lion.



- 295—296—297—298—299 First phalanges of all the digits of the right paw. Sandford Hill Cave, Beard. These exactly correspond with each other and the metacarpals. (A.) Figured in Pl. XXI, figs. 6, 7, 8, 9, 10.
- 300—301—302—303—304 First phalanges of all the digits of left paw. Bleadon, Beard. Mounted with paw.
- 305 First phalange of first digit. Bleadon, Beard.
- 306—307—308—309—310—311—312—313—314—315—316—317—318—319—320—321—322—323—324—325—326—327—328—329—330—331 Twenty-six first phalanges of the different digits of the fore paw, except the first. The sizes are very various. Bleadon, Beard. 330, 331, are in breccia.
- 331<sup>a</sup> First phalange. Williams.
- 332—333 Second phalanges of second and third digits. Bleadon, Beard. Figured in Pl. XXI, figs. 11, 12.
- 334 Second phalange of fourth digit. Sandford Hill, Beard. (A.) Figured in Pl. XXI, fig. 13.
- 335 Second phalange of fifth digit. Bleadon, Beard. Figured in Pl. XXI, fig. 14.
- 336—337—338—339 Second phalange of second, third, fourth and fifth digits. Bleadon, Beard. Mounted with paw.
- 340—341—342—343—344—345 Second phalanges of fore paw of various sizes. Bleadon, Beard.
- 346—347 Imperfect third phalanges, uncertain as to position. Mounted with paw. Bleadon, Beard.
- 348 Accessory carpal sesamoid, mounted with right paw. Bleadon, Beard.
- 349—350—351—352—353—354 Sesamoids of metacarpals or metatarsals, mounted with the fore paws. Bleadon, Beard.
- 355 Fifth metacarpal of young animal. Bleadon, Beard.
- 356 Fifth metacarpal of very young animal. Hutton, Beard. Figured in Pl. XXII, fig. 4. (B.)
- 357 First phalange, first digit of very young animal. Bleadon, Beard.
- 358—359—360 First phalanges of different digits of young animals. Bleadon, Beard.
- 361 First phalange of young animal. Hutton, Beard.
- 362 First phalange of very young animal. Hutton, Beard. Figured in Pl. XXII, fig. 5. (B.)

- 363 Second phalange, left paw, very young. Bleadon, Beard.  
 364 Second phalange, very young. Hutton, Beard. Figured in Pl. XXII, fig. 6. (B.)

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*2nd.—Hind Limb.*

- 365—366 Pair of ossa innominata. (A.) Sandford Hill, Beard. These are probably those of an adult, but not old female. They closely agree in condition and age with the skull No. 1. When looked at in front, the inward curvature of the ossa pubis (*m*, *b*) is greater in the lioness than in the lion, so that the angle formed by the meeting of these bones, or at their symphysis, is more open in the former than in the latter. The anterior descending branch of the same bone is also larger and stouter in the lion than in the lioness, and the muscular ridges are much more strongly marked. In these respects these fossils agree with lioness. That represented in Pl. III, fig. 1, three quarters natural size, is the same bone of a large male from Crayford, if judged by the same character. It is in the British Museum. Fig. 2, is that of a diseased and mal-formed tiger, inserted in the plate by a mistake of the artist. Pl. XXVI, figs. 1, 2.

A difference has been insisted on between lion and tiger, in this bone. In tiger the length of the ilium (*a*) to the anterior edge of the acetabulum (*n*), or the articulation for the femur, is equal to that of the ischium (*h*, *f*) and acetabulum (*n*) taken together, whereas in lion the ilium is proportionately longer. But we have reason to believe, that this, though a general rule, is by no means constant; but in this the fossils agree with lion as in other parts of the skeleton. See de Blainville, *Ost. Felis*, p. 30.

- 367 Os pubis, with part of acetabulum. Sandford Hill, Beard. This, according to the characters laid down above is the left os pubis of a male animal, of rather greater age than the last. Figured in Pl. XXVI, fig. 3.  
 368 Acetabulum, with part of ilium, left side. Bleadon, Beard.  
 369 Left femur, proximal articulation. Bleadon, Beard.  
 370 Left femur, part of shaft. Bleadon, Beard.  
 371 Left femur, distal end. Bleadon, Beard.

These are figured in Pl. XVIII, fig. 4, in the same manner as the humerus in the same plate. The founda-

tion in light tint, is from a cast found by Sr. Philip Egerton, at Gailenreuth, which was given by Mr. Boyd Dawkins to our Museum, this is reversed in the plate. The shaft 370, is in a deeper tint, and the two extremities 369, 371, are in full tint. It will be seen that 369, 370 exactly agree with the German bone, but 371 is a little smaller. They are much larger than the corresponding bones of any lion we have met with. The distal aspect of 371 is represented in the same plate fig. 5.

- 372 Part of distal articulation of right femur. This is larger than 371, or the German bone. Bleadon, Beard.
- 373 Right femur, distal articulation, rather smaller than 371. Bleadon, Beard.
- 374 Portion of shaft of femur, smaller than 370. Bleadon, Beard.
- 375 Cast of the Gailenreuth femur, above mentioned, right side. Given to the Museum by Mr. Boyd Dawkins. Figured in Pl. XVIII, fig. 4.
- 376—377 Hutton. Pair of femora of young animal. (B.) Figured in Pl. XXII, figs. 7, 8.

These with the other bones of young animals in this collection are of some importance, as they show the entirely different character of the young and adult bones. They will prevent a repetition of the mistake made by M. Gervais in his "Zoologie et Palæontologie Francaises," p. 227, where he states that the smaller lion-like bones discovered by MM. De Serres, Dubrueil, and Jeanjean in the caves of Lunel Viel, were the bones of young *Felis spelæa*—"ayant encore leur dents de lait." These bones, as represented by the above authors, "Oss. foss de Lunel Viel," Pl. VII, figs. 3, 4, 5, 6; Pl. VIII, figs. 15, 16, are undoubtedly, as the authors state, the bones of adult animals of about the size of, or perhaps smaller than, the average lion. Whereas M. Gervais has mixed them up with others, also described as lions' bones, but which are doubtless those of the young *Felis spelæa*, Pl. VII, figs. 7, 8, 9, 10, and part of a lower jaw which appears, though rather doubtfully, to be that of a young hyæna with milk teeth, Pl. VII, fig. 11.

- 378 Patella. Bleadon, Beard. Mounted with skeleton, figured half natural size, Pl. XIX, figs. 5, 5'; full size, Pl. XXV, fig. 6.
- 379 Patella. Bleadon, Beard. With skeleton.

- 379<sup>a</sup>—380—381—382—383—384—385 Patellæ of various sizes. Bleadon, Beard.
- 385<sup>a</sup> Patella, small. Williams.
- 386 Left tibia, perfect, with the exception of the proximal epiphysis. (A.) Sandford Hill, Beard. Pl. XIX, figs. 1, 1', 1'', half natural size, and Pl. XXV, fig. 3.
- 387—Proximal end of left tibia. Bleadon, Beard. Pl. XIX, figs. 2, 2'. This and the last are combined in Pl. XXV, fig. 3, which thus gives a lateral aspect of the entire bone. The two pieces exactly correspond in size, and if compared with those of recent *feles*, they exhibit the far greater massiveness of the limbs of the fossil animal.
- 388 Proximal end of left tibia. Bleadon, Beard. Rather smaller than the last.
- 389 Distal end of right tibia. Sandford Hill, Beard. An older bone than 386, and rather smaller.
- 390—391—392—393—394—395—396 Portions of shafts and distal ends of tibiæ. Bleadon, Beard. Some of these hardly exceed those of lion in size, shewing that the greater average massiveness of the limb was rather varietal than specific. The greater extent of the attachment for the tendon of the patella on the anterior crest seen in fig. 2 of Pl. XIX, and fig. 3 of Pl. XXV, is probably due to the greater size of the limb and in correlation with it.
- 397 Tibia of very young animal. (B.) Hutton, Beard.
- 398 Right fibula, without epiphyses. (A.) Sandford Hill Cave, Beard. Young adult animal. Figured, half natural size in Pl. XIX, fig. 3'; and full size in Pl. XXV, fig. 4.
- 399 Distal end of left fibula. Bleadon, Beard. Figured, half natural size in Pl. XIX, fig. 4; full size in Pl. XXV, fig. 5.
- 400 Right fibula of very young animal. Bleadon, Beard. Figured in Pl. XXII, fig. 9. (B.)? if from Hutton.
- 401 Fibula of very young animal, not the pair of 400. Bleadon, Beard. Though these two bones were among the Bleadon bones of Mr. Beard, they more resemble in condition and character the Hutton bones.
- 402 Astragalus, left. Bleadon, Beard. This exactly corresponds in every particular with the calcaneum, 419,

and the figured navicular, cuboid, and mesocuniform, excepting that the navicular belongs to the right foot. They all probably belonged to one animal which was large, old, and powerful; all these bones are more or less roughened by exostosis. Figured in Pl. IV, fig. 1.

- 403 Astragalus, right. Sandford Hill, Beard. Mounted with paw. (A.)
- 404 The pair of 403. (A.)
- 405 Astragalus. Sandford Hill, Beard.
- 406—407—408—409—410—411—412—413—414—415—416—417—418 Thirteen astragali of various sizes, from that of 402 to 417 which is not larger than that of ordinary lion. Bleadon, Beard.
- 419 Left calcaneum. Is part of the set mentioned above—see 402, Pl. IV, fig. 2. Bleadon, Beard.
- 420 Right calcaneum. (A.) Sandford Hill, Beard. Mounted with paw.
- 421 Left calcaneum. (A.) The pair of 420. Mounted with paw.
- 422—423—424—425—426—427—428—429—430—431—432—433—434—435—436—437 Sixteen calcanea of various sizes, from that of 419 to others which are not larger than that of lion. 435 is probably hardly adult, though nearly of full size.
- 438 Calcaneum of very young animal. Hutton, Beard. (B.)
- 439 Right scaphoid, probably belonged to the same animal as 402, &c., reversed figure in Pl. IV, fig. 3. Bleadon, Beard.
- 440 Right scaphoid, mounted with skeleton. (A.) Sandford Hill, Beard.
- 441 Left scaphoid, mounted with skeleton. Bleadon, Beard.
- 442 Small right scaphoid, size of that of the lion. Bleadon, Beard.
- 443 Right ectocuniform. Bleadon, Beard. Figured, front aspect reversed, in Pl. IV, fig. 5, and the external aspect in fig. 5'.
- 444 Left ectocuniform, mounted with skeleton. Bleadon, Beard.
- 445 Right ectocuniform. Sandford Hill, Beard. (A.)



- 446 Left cuboid, belongs to set mentioned 402. Bleadon, Beard. Figured, front aspect in Pl. IV, fig. 4; internal aspect, fig. 4'; inferior aspect, fig. 4''.
- 447\* Left mesocuniform, belongs to set mentioned 402. Figured in Pl. IV, fig. 7. Bleadon, Beard.
- 448 Endocuniform? Figured in Pl. IV, fig. 7. Bleadon, Beard.

This bone is mutilated, if restored as shewn by the outline in the figure, it would resemble a large feline endocuniform; but the lower articulation by which it articulates with the rudimentary metatarsal of the first digit, differs somewhat from that of lion. The corresponding joint of the only specimen of the metatarsal is also broken, so that we cannot say whether the variation was carried out in that bone as well.

The remaining figures in Pl. VI of the ectocuniform of lion and tiger, shew that the posterior process of the bone in *Felis spelæa* resembled that of lion, and differed from that of tiger, but though this is generally the case, it is now found that it is not an absolutely constant character.

- 449 First rudimentary metatarsal of first digit, left side. Figured in Pl. V, fig. 1. Bleadon, Beard. This is a rare and curious bone, not easily to be recognised as a metatarsal at all.
- 450 Second metatarsal, right side. Sandford Hill, Beard. Figured in Pl. V, fig. 2. (A.)
- 451 Third metatarsal, right. Bleadon, Beard. Mounted with paw.
- 452—453 Fourth and fifth metatarsals, right. Sandford Hill, Beard. Figured in Pl. V, figs. 4, 5. (A.)
- 454 Second metatarsal, wants distal articulation, left. Bleadon, Beard.
- 455 Third metatarsal, right side. Sandford Hill, Beard. Figured in Pl. V, fig. 3, reversed. (A.)
- 456 Fourth metatarsal, right side. Sandford Hill, Beard. (A.)
- 457 Fifth metatarsal, right. Bleadon, Beard.

The above nine specimens are mounted with the skeleton.

- 458—459 Second metatarsals, proximal portions. Bleadon, Beard.

460—461—462—463—464—465 Six second metatarsals of various sizes. The two first nearly perfect and of large size. The others proximal portions only. Bleadon, Beard.

466—467—468—469—470 Five third metatarsals of various sizes. Bleadon, Beard.

471—472—473 Three fifth metatarsals. Bleadon, Beard.

These shew considerable variation in form, as do those of recent lion and tiger; some are nearly straight, and very stout; others are slender, and curved.

474—475—476—477 First phalanges of hind paw, right side. Bleadon, Beard. Figured in Pl. V, figs. 6, 7, 8, 9. The are all of large size.

478—479—480—481 First phalanges of hind paw, left side. Bleadon, Beard. Mounted with paw.

482—483—484—485—486—487—488—489—490—491—492—493—494—495—496—497—498—499—500—501—502—503—504—505 Twenty-four first phalanges of hind paw. These are distinguished in general by their flatness, width, and shortness, from those of the fore foot. Bleadon, Beard.

506—507 Two first phalanges of hind paw, proximal portions only. (A.) Sandford Hill, Beard.

508—509 Two first phalanges of hind paw. Williams.

510—511—512—513 Second phalanges of right hind paw. Bleadon, Beard. Figured in Pl. V, figs. 10, 11, 12, 13.

514—515—516 Second phalanges of second, third, and fourth digits of left hind paw. Bleadon, Beard.

The above seven are mounted with skeleton.

517—518—519—520—521—522—523—524—525—526—527—528 Twelve second phalanges of hind paws. Bleadon, Beard.

These exhibit in a marked manner the variation in size of the animal.

529—530—531 Three third phalanges. 531 is probably that of the fifth digit of the hind paw, as it is the smallest in the recent animal, this is figured in Pl. V, fig. 14. Bleadon, Beard.

532 A fine specimen of a large claw bone, or third phalange, but it is not so large as the great claw bone of the first digit of the fore paw would certainly have been. Williams.

- 533 to 563 are fragments of metacarpals and metatarsals, distal portions only. These vary in size from the largest described to that of small lion. Bleadon, Beard.
- 564 Distal portion of metatarsal. Sandford Hill, Beard.
- 565 to 587 Twenty-three fragments of canines. Bleadon, Beard.
- 588 to 615 Twenty-one fragments of molar dentition. Beard, and Williams.

After the first sheets went to press it was found that 30<sup>a</sup>, 30<sup>b</sup>, had been accidentally misplaced; they should have been 15<sup>a</sup>, 15<sup>b</sup>, being adult bones. Also, 33 should have been 53, it being a lower jaw with DC.

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### III.

## *Felis* (*Leopardus*) *Pardus*.

*Linnæus.*

In various parts of Germany and France, as well as in Gibraltar, remains of a *Felis* of the size of the panther of Africa and Western Asia, have been found, which were identified with that animal by Dr. Falconer.

The evidence of the existence of this animal in England is confined, as far as we know, to the few specimens in the Taunton Museum, and a single canine in the possession of Lord Enniskillen, which he kindly placed at our disposal, for the purpose of our larger work on the Pleistocene Mammalia of Great Britain, and of which a figure is given in Pl. XXIV, fig. 4.

The recent species of *pardus* has been considered as divided into two, the panther properly so called, and the leopard, the former consisting of the larger and stouter, and the latter of the more slender and smaller individuals; but an examination of a large number of skulls, skeletons, skins, and living animals, has convinced us that the differences are only varietal, and that the conclusions of the more modern naturalists on the subject are correct. At the same time there exists in Northern China, and, we

have reason to believe, also in other parts of Eastern Asia, a species which is undoubtedly distinct, and which differs from the panther in the comparative length of the nasals and frontal processes of the maxillaries, exactly as the tiger differs from the lion. This species has been named by Dr. Gray, (Proc. Zool. Soc., 1867, p. 264), *Leopardus Chinensis*; Dr. Gray describes a third species, under the name of *Leopardus Japonensis*, (Proc. Zool. Soc. 1862, p. 262); and the fourth is the jaguar of America, *Leopardus onca*, Linn. These are the only living species with which it is necessary to compare our fossils.<sup>8</sup>

From those of the jaguar, the teeth of our animal are distinguished by the more slender, delicate, and compressed form, as contrasted with the stout conical look of the cusps of those of the jaguar. But the fossils most closely agree with those of the panther and Chinese leopard. To which of these two the fossils belong it is of course somewhat uncertain, until entire skulls of the animal are found. We must consequently rest content with the probability that they are identical with the cotemporary fossils of France and Germany, and that they are those of the panther.

Of the fossil species, *Felis pardoides* of the Norfolk Pliocene (Owen B. Foss. Mam. p. 169) appears to differ in the lowness of the crown of  $\overline{M\ 1}$ , while the *Felis* of the same size, recently described by M. Gaudry from the Miocene (?) of Attica, appears to differ solely in the greater length and slenderness of the limbs. But these determinations are from small portions of the animals, and are therefore to some extent provisional.

<sup>8</sup> A fifth species of leopardus of large size has been recently described by M. Milne-Edwards, from Northern China, Ann. Sci. Nat. sec. 5, t. VIII, pp. 374-76.

## IV.

Catalogue of Bones of *Felis Pardus*.

- 616 Right upper canine of nearly adult animal, C.  
 617 Right lower canine of apparently the same individual, C.  
 618 Right lower carnassial, M 1, of the same.

These three teeth belonged to Mr. Williams. They have the appearance of bones from the Hutton Cave, but some resembling them in condition have been found at Bleadon. They are figured in Pl. XXIV, figs. 1, 2, 2', 2'', 3.

- 619 Upper milk canine, right, DC. This is much smaller than that of the lion, but it is of the same general form, except that the cone is more slender, and there is a bulge forming a marked cingulum round the base. Bleadon, Beard.  
 620 Left femur, the upper half without the epiphyses. This appears to be the bone of a nearly adult animal; it coincides in measurement, except that it is a little shorter, with the femur of a very large panther from West Africa in the Museum of the College of Surgeons. Bleadon, Beard. Figured in Pl. XXIV, fig. 5.  
 621 Left ulna, upper portion, imperfect. This is the bone of a smaller, but older animal than the last; it agrees closely with the ordinary form of the ulna of panther. Bleadon, Beard.  
 622 Second left metatarsal, young animal, but nearly adult. Bleadon, Beard.  
 623 Fourth right metatarsal, very young. Williams, probably Bleadon.

We consider these two last bones are small for those of *Felis spelæa* of corresponding age; but they appear to agree with our estimate of those of panther.

## V.

*Felis Caffer*.<sup>9</sup>

*Demarest.*

Several bones of *Felis* somewhat larger than those of specimens of wild cat have occurred frequently in various

<sup>9</sup> Strictly, M. Demarest calls the species *Caffra*.



caves in Western Europe. These have been variously described as belonging to the ordinary wild cat of Europe, *Felis catus*, *Felis catus magna*, &c., by different authors. A considerable part of a jaw of about this size exists in the Taunton Museum, agreeing most closely in condition and appearance with the fossils from Bleadon Cave. On comparing this fossil with all the specimens of European wild cat I could obtain access to in the British Museum, and that of the College of Surgeons, I found that it presented such differences that I could not consider it as belonging to that species. The jaw was more compressed and deeper, the teeth were proportionately much smaller. I found also a character which appeared constant in all the specimens of *Felis catus* that I could consider authentic; this is a considerable thickening of the inner alveolar border of the lower jaw, just as it rises on the base of the coronoid process, which throws the carnassial  $\overline{M} 1$  outwards. This does not exist in the fossil,  $\overline{M} 1$  rising perpendicularly from the jaw. In examining the series of the smaller cats in the College of Surgeons, I found that the lower jaw of *Felis Caffer* precisely agrees with our fossil in the most minute measurements, and particularly in the upright position of  $\overline{M} 1$ . A subsequent examination of the larger series of skulls in the British Museum, confirmed this determination, the agreement between the several specimens of *Felis Caffer* and our fossil being closer than I had ever met with in comparing fossil with recent animals. The fossil differs from the whole of the small leopardine group, and from the smaller lynxes by the very small size of the teeth; from the different species of chaus of India and North Africa, including the serval, by the comparatively smaller  $\overline{M} 1$ , and from all the smaller species of *Felis* by size and proportion of the teeth, the details of these differences space

will not permit me to describe. In fact I could not find one that resembled it, except those of the species I have indicated above. One specimen alone labelled *Felis catus* agreed with it in any respect; but this had been many years in the museum, and no other locality than the Zoological Garden was given it. This skull differed in every respect from every authentic specimen of the European wild cat I could discover. I consequently suspect that some error existed in the name given to it in the gardens, particularly as the original habitat is unknown.

On comparing our fossil with various figures of fossil jaws of *Felis*, I found a close agreement with that which is figured by M. Schmerling, (Oss. foss. de Liege, p. 2, Pl. XVIII, figs. 13, 14,) as the jaw of *Felis catus magna*, and with that from Kent's Hole, figured in Mr. Ennery's Cavern Researches, the original of which is now in the British Museum. I have also found a few other bones which appear to belong to a *Felis* of the size of *Felis caffer*, which I therefore ascribe to the same species.

Of course this determination is provisional, and it may be considerably modified by the discovery of more perfect specimens. Dr. Gray in a supplement to the Memoirs on the *Felidæ* above quoted, considers *Felis caffer* a variety of *Chaus lybicus*, together with other supposed species in which he includes the small *Felis maniculata*, (Proc. Zool. Soc. 1867, p. 398.) My own observations on the skulls of these animals appear to me to prove that if all the forms he quotes are varieties of one species, they are constant as far as osteological characters indicate, in most if not all instances. The form denoted by the name *caffer* at present is found only in Southern Africa.

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## VI.

Catalogue of Bones of *Felis Caffer*.

- 624 Left mandible, with PM 3, M 1, it wants the anterior and posterior portions. Williams, probably Bleadon. Figured in Pl. XXIV, figs. 6, 6', 6".
- 625 Left femur, proximal half. Williams, probably Bleadon. Figured in Pl. XXIV, fig. 7.
- 626 Radius of nearly adult animal, without epiphyses. Hutton, Beard.
- 627 Fibula, probably of the same individual.
- 628 Left deciduous carnassial, DM 3. This tooth is much too large for that of *Felis catus*, and would agree with that of *Felis caffer* in size. It is therefore referred to that animal. Williams.

## VII.

*Felis Catus*.

A few feline bones occur in the Taunton collection of the size of those of the wild cat of Europe. The existence of this animal in deposits of this age has been demonstrated by Professor Owen, (Br. Foss. Mam. p. 172) ; so that it is not necessary for me to enter further into the description of the animal. No teeth or jaws have occurred to us in Somerset; but in the river deposits of the Thames, jaws and other parts of the animal occur which prove beyond a doubt that it was cotemporary with the mammoth in these Islands.

## VIII.

Catalogue of Bones of *Felis Catus*.

- 629 Eleventh dorsal vertebra. Banwell, Beard.
- 630 First lumbar vertebra. Banwell, Beard.
- 631 Scapula, young, but nearly adult, a very perfect specimen. Hutton, Beard.
- 632 Right ulna, proximal portion. Bleadon, Beard. Figured in Pl. XXIV, fig. 9.
- 633 Fifth metacarpal. Hutton, Beard.

## IX.

We subjoin a few measurements of the skulls, teeth, and principal bones. Much more detailed tables of measurement, shewing the relative size of specimens of all the known bones of *Felis spelæa*, when compared with those of the lion, tiger, and in some cases with those of jaguar, puma, and panther, are given in the monograph by Mr. Boyd Dawkins and myself, published by the Palæontographical Society.

## Measurements,

*In inches and decimals of inch.*

## 1.—SKULLS.

	No. 1.	Nos. 2, 3.	No. 4.
Basal length .. ..	13·00 <sup>1</sup>	11·55	
Zygomatic width .. ..	9·10 <sup>2</sup>	9·20	
Extreme length .. ..		13·22	
Minimum width at orbits ..	3·20	2·66	
Width of maxillaries at $\overline{PM\ 4}$	5·12	5·00	6·00
Length of upper molar series } ..		2·74	3·40
Lower jaw, symphysis to condyle } ..	9·90	9·00	
Do. circumference anterior to $\overline{PM\ 3}$ } ..	5·40	4·08	
Do. do. post to $\overline{M\ 1}$ ..	5·50	4·70	
Height of coronoid process from angle } ..	5·00		
Canine to $\overline{M\ 1}$ inclusive ..	5·00	4·50	
Molar series, lower ..	2·40	1·70	

<sup>1</sup> Estimated from placing the skull on the jaws belonging to it.

<sup>2</sup> Probably a little below the true width, owing to unavoidable slight distortion of the skull in re-articulating it.

## 2.—MILK DENTITION.

*Upper.*

	<u>DC</u> No. 37	<u>DC</u> No. 40	<u>DM</u> 2 No. 30	<u>DM</u> 3 No. 24	<u>DM</u> 3 No. 36	<u>DM</u> 4 No. 29
Antero-posterior measurement	0.46	0.40	0.14	1.00	0.93	0.28
Transverse do.	0.32	0.30	0.11	0.33	0.28	0.50
Height	0.89	0.70	0.90	0.50	0.50	0.23
Circumference	1.18	1.00	0.30	2.33	2.28	1.37
Length of molar series 1.56.						

*Lower.*

	<u>DM</u> 3 No. 45	<u>DM</u> 3 No. 54	<u>DC</u> No. 56	<u>DM</u> 3 No. 53	<u>DM</u> 3 No. 41
Length of crown	0.22	0.50	0.44	0.70	0.51
Width	0.20	0.21	0.21	0.27	0.22
Circumference	0.50	0.72	0.72	0.45	0.34
		1.20	1.10	1.60	1.30

	<u>DM</u> 4 No. 45	<u>DM</u> 4 No. 41
1	0.85	0.67
2	0.35	0.30
3	0.55	0.44
4	2.00	1.70

	No. 45	No. 41
Length of molar series	1.30	1.20



## 3—ADULT DENTITION.

*Upper.*

	I 1	I 2	I 3	C	C	C
	Col. Wood	Col. Wood	No. 58	No. 60	Col. Wood	Crayford
Length	..	1.29	1.32	5.25	3.35	6.0
Height of crown	..	0.40	0.43	2.42	1.30	2.9
Width of do.	..	0.23	0.29			4.1
Circumference	..			3.76	2.20	M 1
	PM 2	PM 2	PM 3	PM 4	PM 4	No. 82
	No. 71	in No. 2	Mr Dawkins	No. 78	in No. 2	0.52
Antero-posterior meas <sup>t</sup> .	0.36	0.31	1.27	1.75	1.34	
Height of crown	..	0.28	0.70	0.40 <sup>1</sup>	0.30 <sup>1</sup>	
Width of do.	..	1.04	0.58	0.50	0.40	
Circumference	..		2.99	4.20	3.31	

<sup>1</sup> From the base of the crown to the cleft between (a) and (c).

*Lower.*

	I 1	I 2	I 3	C	C	C
	from 2	from 1	from 1	No. 87	No. 99	Mr Dawkins
1 Length	..	1.04	1.65	5.46	0.78	0.60
2 Height of crown	..	0.29	0.35	2.10	0.42	0.34
3 Width of do.	..	0.20	0.26	1.10	0.46	
4 Circumference	..	0.60	0.80	3.25	2.10	1.62

*Lower.—(continued).*

	$\overline{\text{PM 4}}$	$\overline{\text{PM 4}}$	$\overline{\text{M 1}}$
	No. 104	No. 106	No. 108

Mr. Sanford

1	1.25	0.90	1.30
2	0.64	0.41	0.60
3	0.88	0.58	0.45
4	3.10	2.28	3.25
			2.60

Length in the incisors and canines, signifies the entire length from point of the crown to end of the fang; in the molars, the antero-posterior measurement.

## VERTEBRÆ.

	4th Cervical	6th Cervical	1st Dorsal	8th Dorsal	11th Dorsal
	No. 128	No. 129	No. 132	No. 135	No. 136
Length of centrum ..	1.62	1.44	1.45	1.30	1.44

No. 141

1.70

No. 139a

1.62

5th Caudal

No. 160

1.67

3rd Caudal

No. 158

1.35

3rd Sacral

No. 157

1.30

7th Lumbar

No. 155

2.10

5th Lumbar

No. 152

2.96

2nd Lumbar

No. 146

2.15

Length of centrum ..

14th Caudal

No. 189

1.95

12th Caudal

No. 184

2.12

2.30

10th Caudal

No. 181

2.40

2.65

9th Caudal

No. 177

2.12

2.60

8th Caudal

No. 175

2.20

2.20

6th Caudal

No. 162

1.75

2.00

Length of centrum ..

## SCAPULA.

	No. 202	No. 204
Circumference at neck .. ..	6.55	7.00
Length of glenoid cavity .. ..	3.00	3.00
Width of ditto .. ..	2.30	
Height of spine from surface ..	2.25	
Acromion to surface of glenoid cavity ..	1.10	0.90

## HUMERUS.

	No. 208	No. 206	No. 207
	Belgian bone Schmerling		
Entire length .. ..	13.75		
Minimum circumference .. ..	5.50		
Transverse proximal articulation } ..		4.10	
Vertical ditto .. ..		4.60	
Transverse distal ditto .. ..			3.00
Vertical ditto .. ..			4.30

## RADIUS.

	No. 239
Length .. ..	12.75
Minimum circumference .. ..	3.50
Transverse humeral articulation .. ..	1.42
Vertical humeral articulation .. ..	2.10
Transverse carpal articulation .. ..	1.40
Vertical carpal articulation .. ..	2.48

## ULNA.

	No. 219
Depth below radial articulation .. ..	2.69
Thickness at same part .. ..	1.00
Circumference of same part .. ..	6.00
Humeral articulation, linear vertical ..	3.00
Transverse articulation, linear vertical ..	2.10

## OS INNOMINATUM.

	British Museum specimen	No. 365
Total length .. ..	14.50	13.25
Vertical height of ilium ? .. ..	3.50 ?	3.25
Transverse diam <sup>r</sup> . of acetabulum .. ..	2.25	2.25
Longitudinal ditto .. ..	2.20	2.25
Acetabulum to end of ischium .. ..	5.10	4.50
Acetabulum to end of ilium .. ..	7.42	6.78*

\* Somewhat less than the true length, as the bone is abraded.

## FEMUR.

		Gailenreuth bone	No. 269	No. 271
Length	..	16.65		
Minimum circumference	..	5.00		
Transverse proximal articulation	}	3.00	3.10	
Vertical ditto		3.00	3.10	
Transverse distal ditto	..	2.20		3.20
Vertical ditto	..			5.80

## TIBIA.

		No 387	No. 388	No. 386
Transverse proximal articulation		3.60	3.20	
Vertical ditto	ditto	2.80	2.60	
Transverse distal	ditto			3.00
Vertical ditto	ditto			1.90
Minimum circumference				4.00

## CALCANEUM.

			No. 416	No. 437
Length	..	..	5.60	5.00

## Explanation of Plates.

## PLATE I.

Fig.

- 1—Lower jaw, external aspect. No. 1.
- 2—The same, internal aspect.
- 3—Posterior aspect of part of lower jaw from Crayford, in possession of Dr. Spurrell.

## PLATE II.

*Half of natural size.*

- 1—Radius. No. 239.
- 2—The same, proximal articulation.
- 3—The same, distal articulation.
- 4—Radius, small form. No. 241.

- 5—Ulna, proximal portion. No. 223.  
 6—The same, external aspect.  
 7—The same, internal aspect.  
 8—Ulna. No. 219.  
 9—Ulna, small, from Wookey Hyæna Den. Mr. Boyd  
 Dawkins' collection.

## PLATE III.

*Two-thirds of natural size.*

- 1—Os innominatum. Thames' brickearths, Crayford, in  
 British Museum, probable male.  
 2—Os innominatum. Tiger, mal-formed animal, inserted in  
 plate through error of Artist.

## PLATE IV.

*Tarsus.*

- 1—Astragalus. No. 402.  
 2—Calcaneum. No. 419.  
 3—Scaphoid or navicular. No. 439.  
 4—Cuboid. No. 446.  
 4'—The same, internal aspect.  
 4''—The same, external aspect.  
 5—Ectocuniform. No. 443.  
 5'—The same, internal aspect.  
 5''—The same bone, lion.  
 5'''—The same bone, tiger.  
 6—Mesocuniform. No. 447.  
 7—Endocuniform. (?) No. 448.

## PLATE V.

*Hind paw.*

- |       |               |   |          |
|-------|---------------|---|----------|
| 1—1st | } metatarsals | { | No. 449. |
| 2—2nd |               |   | No. 450. |
| 3—3rd |               |   | No. 451. |
| 4—4th |               |   | No. 452. |
| 5—5th |               |   | No. 453. |



- $$\left. \begin{array}{l} 6- \\ 7- \\ 8- \\ 9- \end{array} \right\} \text{1st phalanges} \left\{ \begin{array}{l} \text{2nd} \\ \text{3rd} \\ \text{4th} \\ \text{5th} \end{array} \right\} \text{digits} \left\{ \begin{array}{l} \text{No. 474.} \\ \text{No. 475.} \\ \text{No. 476.} \\ \text{No. 477.} \end{array} \right.$$
  

$$\left. \begin{array}{l} 10- \\ 11- \\ 12- \\ 13- \end{array} \right\} \text{2nd phalanges} \left\{ \begin{array}{l} \text{2nd} \\ \text{3rd} \\ \text{4th} \\ \text{5th} \end{array} \right\} \text{digits} \left\{ \begin{array}{l} \text{No. 510.} \\ \text{No. 511.} \\ \text{No. 512.} \\ \text{No. 513.} \end{array} \right.$$
  
 14—3rd phalange, lateral aspect, 5th digit (?) No. 531.
- $$\left. \begin{array}{l} 15- \\ 16- \end{array} \right\} \text{Sesamoids. Nos. 349 and 350.}$$

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#### PLATE VI.

Skull, lateral aspect. Nos. 2, 3.

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#### PLATE VII.

The same, superior aspect.

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#### PLATE VIII.

The same, inferior aspect.

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#### PLATE IX.

- 1—The same, occipital aspect.  
 2—Squamosal of large animal, inferior aspect. No. 28.  
 3—The same, superior aspect.

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#### PLATE X.

- 1—Skull, superior aspect. No. 1.  
 2, 3—Malleus, from the same skull.

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#### PLATE XI.

*Upper dentition, adult.*

- 1—Maxillaries and inter-maxillaries; No. 4, points of the canines slightly restored.  
 2, 2'—First incisor, outer and posterior aspects. From Ravenscliff, Gower, in the possession of Col. Wood.  
 3, 3'—Second incisor, outer and posterior aspects. From Ravenscliff, Gower, in the possession of Col. Wood.  
 4, 4', 4''—Third incisor, outer lateral, coronal, inner lateral aspects. No. 57.

- 5—Right canine, outer lateral aspect. Ravenscliff, Col. Wood.  
 6—Left canine, inner lateral aspect. No. 60.  
 7—Right canine, small, outer lateral aspect. No. 61.  
 8, 8'—Coronal and outer aspects of premolar 2, PM 2. No. 71.  
 9—Premolar 3, PM 3, outer aspects. Wookey Hyæna Den,  
 Mr. Boyd Dawkins.  
 10—PM 3, inner aspect. No. 73.  
 11—PM 3, inner aspect. No. 72.  
 12—PM 4, outer aspect. No. 78.  
 13—PM 4, inner aspect. No. 13.  
 14, 14', 14''—Molar, M 1 posterior, anterior, coronal aspects.  
 No. 82.

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## PLATE XII.

### *Lower dentition.*

- 1, 1'—First left incisor, anterior and posterior aspects, from skull No. 2.  
 2, 2', 2''—Second left incisor, anterior, posterior and inner aspects, from skull No. 1.  
 3, 3', 3''—Third left incisor, anterior, posterior and inner aspects, from skull No. 1.  
 4—Canine,  $\bar{C}$ , outer aspect. No. 87.  
 5— Ditto inner aspect. No. 88.  
 6— Ditto outer aspect, old and small animal. No. 89.  
 7—Premolar 3, PM 3, outer aspect. No. 99.  
 8, 8'—PM 3, inner and coronal aspects. No. 100.  
 9—PM 3, inner aspect, small. Wookey Hyæna Den, Mr. Boyd Dawkins.  
 10—PM 4, outer aspect. No. 104.  
 11, 11'—PM 4, inner and coronal aspects. No. 105.  
 12—PM 4, inner aspect. No. 106.  
 13—Molar or carnassial,  $\bar{M} 1$ , worn, outer aspect, large old animal. Wookey Hyæna Den, Mr. Boyd Dawkins.  
 14, 14'— $\bar{M} 1$ , lateral and coronal aspects. No. 118.  
 15— $\bar{M}$ , small old animal. Wookey Hyæna Den, Mr. W. A. Sanford.
-

## PLATE XIII.

*Milk dentition, portions of skulls of young animals.*

- 1, 1', 1''—Left maxillary, outer, inner, and inferior aspects. No. 29.

N.B.—The figure of DM 2 is inserted in 1'', from No. 30.

- 2, 2'—Left maxillary, outer and inner aspects. No. 30.

- 3, 3'—Lower jaw, outer and posterior aspects. No. 41. The incisor inserted from No. 45.

- 4—Lower jaw, inner aspect, younger animal than the last. No. 43.

- 5—Upper milk canine, DC, inner aspect. No. 37.

- 6—Upper milk molar 3, DM 3, inner aspect. No. 31.

- 7—Lower milk molar, DC, inner aspect. No. 54.

- 8—Lower milk molar 3, DM 3, inner aspect. No. 53.

## PLATE XIV.

*Vertebrae of the neck and tail.*

- 1, 1', 1''—Proximal, distal, and dorsal aspects of the atlas. No. 126.

The restoration in light tint is slightly enlarged from a specimen from Gailenreuth in possession of Sir Philip Egerton, Bart.

- 2, 2', 2'', 2'''—Dorsal, lateral, proximal, and distal aspects of sixth cervical. No. 132.

- 3, 3', 3'', 3'''—Proximal, dorsal, lateral, and distal aspects of seventh caudal. No. 166.

The following letters are used for the different parts of the vertebrae, in Pls. XIV, XV, XVI. *c*, centrum; *ae*, anterior epiphysis; *pe*, posterior epiphysis; *n*, neurapophysis; *ns*, neural spine; *pa*, parapophysis; *pl*, pleurapophysis; *hy*, hypapophysis; *d*, diapophysis; *a*, anapophysis; *m*, metapophysis; *az*, pre-zygapophysis; *pz*, post-zygapophysis; *nc*, neural canal; *v*, canal for vertebral artery.

## PLATE XV.

- 1, 1', 1''—Proximal and distal aspects of second dorsal. No. 137.

## PLATE XVI.

*Vertebrae, Sternum*

- 1, 1'—Seventh dorsal, distal and lateral aspects. No. 139.

- 2, 2', 2'', 2'''—Eleventh dorsal, lateral, distal, proximal, and dorsal aspects. No. 141.

- 3, 3', 3'', 3'''—Second lumbar, proximal, lateral, dorsal, and distal aspects. No. 146.  
 4, 4'—Fourth caudal, ventral and distal aspects. No. 159.  
 5—Ninth caudal, dorsal aspect. No. 177.  
 6—Tenth caudal, ventral aspect. No. 181.  
 7, 7', 7''\*—Tenth caudal, dorsal, proximal, and distal aspects. No. 182.  
 8—Twelfth caudal, lateral aspect. No. 184.  
 9, 9', 9''—Fourteenth caudal, dorsal, proximal, and distal aspects. No. 189.  
 10, 10'—Third sterneber, lateral and ventral aspects. No. 197.

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### PLATE XVII.

- 1, 2—Distal and outer, or superior surfaces of right scapula. No. 202.

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### PLATE XVIII.

#### *Limbs.*

- 1—Composite figure of palmar aspect of left humerus. Nos. 206, 207, 208. See description attached to 208.  
 2—Anterior aspect of left humerus. Larkhall gravel, belonging to the Rev. H. H. Winwood. See 208.  
 3—Distal articulation of left humerus. No. 209.  
 4—Composite figure of left femur. Nos. 369, 370, 371. See description 371.  
 5—Distal aspect of 371.

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### PLATE XIX.

#### *Hind Limb—Half natural size.*

- 1, 1', 1''—Anterior, proximal, and distal aspects of left tibia. No. 389. 1' shews the sectional aspect of the bone, the epiphyses being absent.  
 2, 2'—Anterior and proximal aspects of proximal portion of left tibia. No. 387.  
 3—Posterior aspect of right fibula. No. 398.  
 4—Distal end of left fibula, external aspect. No. 399.  
 5, 5'—Anterior and posterior aspects of patella. No. 378.

#### *Natural size.*

- 6—Second left metacarpal of gigantic size.  
 7—Ditto ditto ditto

These two are from the lower brickearths, Crayford, in the Thames Valley. They belong to Dr. Spurrell.

\* This may be the eleventh, but if so it is most gigantic ; it is large for the tenth.

## PLATE XX.

*Tarsus.*

- 1, 1'—Scaphoido-lunare, anterior and inferior aspects. No. 251.
- 2—Scaphoido-lunare, anterior aspect, small. No. 252.
- 3—Pisiform, right, carpal aspect. No. 260.
- 4—Pisiform, left, ulnar aspect. No. 261.
- 5, 5'—Unciform, right, anterior and inferior aspects. No. 258.
- 6—Fourth metacarpal, proximal portion, anterior aspect. No. 274, the ordinary form.
- 7—Fifth metacarpal, interior aspect. Small specimen from Wookey Hyæna Den, belonging to Mr. Boyd Dawkins.

## PLATE XXI.

*Fore Paw.*

- 1—First right metacarpal. No. 264.
- 2, 3, 4, 5—Second, third, fourth, and fifth metacarpals. Nos. 268, 269, 270, 271.
- 6, 7, 8, 9, 10—First phalanges of right paw. Nos. 295, 296, 297, 298, 299.
- 11, 12—Second phalanges of second and third digits. Nos. 232, 233.
- 13—Second phalange of third digit. No. 234.
- 14—Second phalange of fourth digit. No. 235.

## PLATE XXII.

*Limbs of young animal.*

- 1—Left humerus. No. 217.
- 2, 3—Left ulna, radial and internal aspects. No. 237.
- 4—Fifth metacarpal. No. 356.
- 5—First phalange. No. 362.
- 6—Second phalange. No. 264.
- 7, 8—Pair of femora, anterior and posterior aspects. No. 276, 277.
- 9—Fibula, right. No. 400.

## PLATE XXIII.

*Felis pardus.*

- 1—Upper canine,  $\underline{C}$ , inner aspect. No. 616.
- 2, 2', 2''— $\overline{M1}$  outer, coronal, inner aspects. No. 618.
- 3—Lower canine,  $\overline{C}$ , inner aspect. No. 617.

4—Lower canine from Banwell, belonging to the Earl of Enniskillen, outer aspect.

5—Femur, posterior aspect. No. 620.

*Felis Caffer.*

6, 6', 6''—Left lower jaw, outer, inner and superior aspects. No. 624.

7—Femur, posterior aspect of proximal end. No. 625.

*Felis catus.*

8—Inner and superior aspects of jaw, from the Crayford brick-earths, in possession of Mr. Wickham Flower.

9—Proximal end of ulna. No. 632.

PLATE XXV.—*SUPPLEMENTARY.*

*Felis spelæa.*

The figures in this plate represent bones of the natural size, of which figures of half size are given in other plates, but in no case is the same aspect repeated.

1—Radius, ulnar aspect. No. 239.

2—Ulna, internal aspect. No. 219.

3—Composite figure of tibia formed by uniting Nos. 386, 387.

4—Fibula, tibial aspect. No. 398.

5—Fibula, distal end, tibial aspect. No. 399.

6—Patella, lateral aspect. No. 378.

PLATE XXVI.—*SUPPLEMENTARY.*

*Felis spelæa.*

The figures in this plate are of the natural size, that of the Os innomination in Pl. III. is of two thirds of natural size, and is probably that of a male, whereas Nos. 1, 2 are probably those of a female.

1, 2—Left outer and right inner aspects of a pair of ossa innominata wanting the greater part of the ossa pubis, female. Nos. 365, 366.

3—Outer aspect of left or pubis of male, with part of the acetabulum and ilium. No. 367.

4—Part of the second and third sacral vertebræ. No. 157.

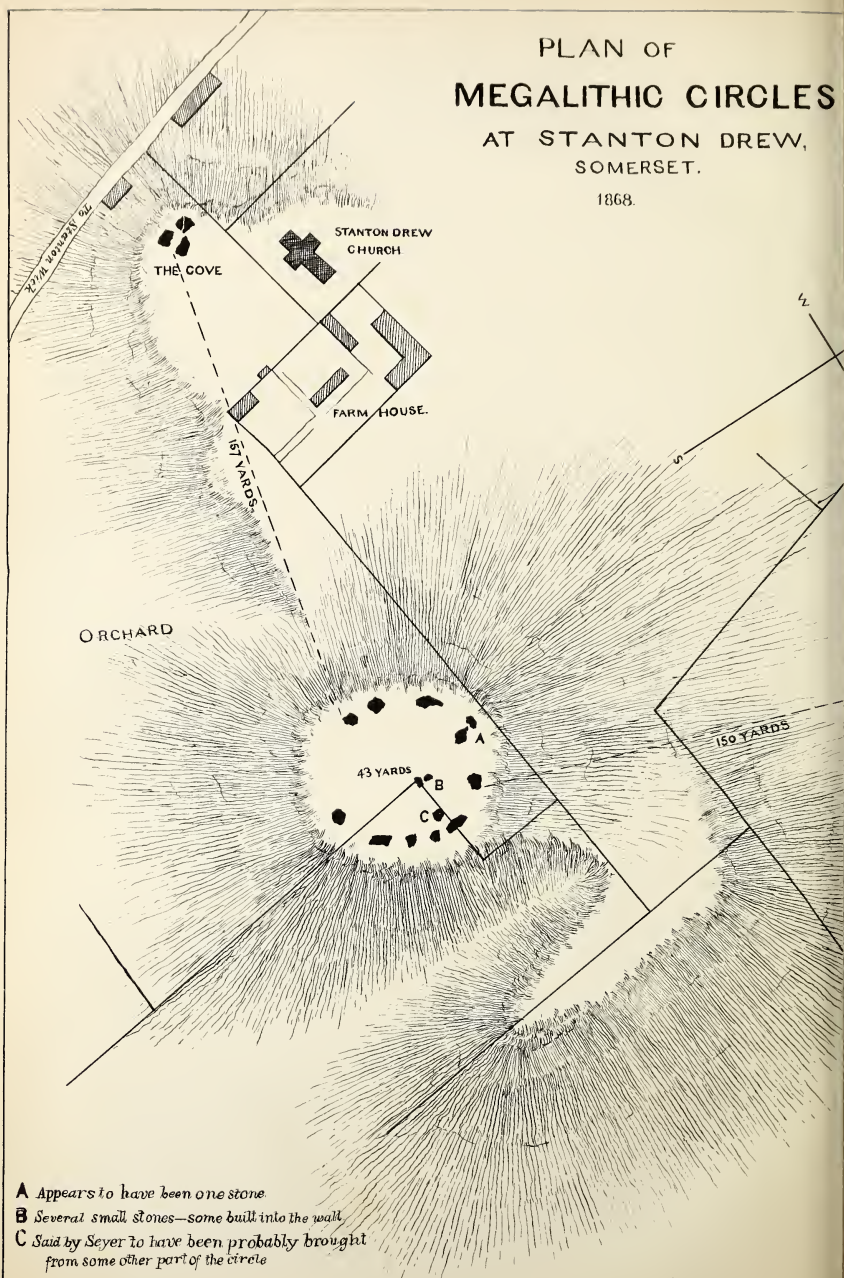




# PLAN OF MEGALITHIC CIRCLES

AT STANTON DREW,  
SOMERSET.

1868.



*A* Appears to have been one stone.

*B* Several small stones—some built into the wall.

*C* Said by Seyer to have been probably brought from some other part of the circle.





# On the Megalithic Remains at Stanton Drew.

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BY THE REV. H. M. SCARTH, M.A.,  
PREBENDARY OF WELLS.

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STANTON DREW is one of the most interesting megalithic monuments of this island, and probably one of the most ancient. It is situated in the county of Somerset, about seven miles south of Bristol, in the valley of the Chew, and near that river, not far from the range of hills called Dundry, and is overlooked by the portion of that hill called Maesknoll, on which there is a camp. It lies to the south of the ancient earthwork or line of demarcation called the Wansdyke, which can be traced at intervals from Great Bedwyn in Wilts, over the downs to the river Avon at Warleigh, near Bathford, and over Hampton Down south of Bath, and on to Stantonbury Camp, and by Compton Dando to Maesknoll. Stanton Drew was therefore situated within the line of the supposed Belgic boundary. The three great megalithic monuments of the south and west of England, are Stonehenge, Abury, and Stanton Drew; and of these Stanton Drew is the smallest. It consists of three stone circles,

or more properly, a central oval and two small circles, which seem to have been connected with the central oval by stone avenues, and give the appearance of two serpents passing out of a central enclosure : such it has been taken to represent.

The first writer by whom it is mentioned is John Aubrey, A.D. 1664, who says, that he was told that the number of stones were much diminished within a few years of his time ; and Dr. Stukeley speaks of a "late tenant," who for covetousness of the little space of ground they stood upon, buried them for the most part in the ground. Mr. Long states in his interesting memoir of Stanton Drew, in the *Archæological Journal*, vol. xv, p. 200, "It does not appear that since Stukeley's visit, A.D. 1723, a single stone has been removed," and we trust that the day is past when historical monuments, such as these, shall suffer wanton destruction ! John Aubrey first brought Abury and Stanton Drew into notice, the former A.D. 1648, the latter 1664. Dr. Musgrave, in his *Belgium Britannicum*, vol. i, p. 206, A.D. 1719, gives an account of Stanton Drew, and illustrates it by an accurate plate of the structure as it then stood. Keysler, in his *Antiquitates Septentrionales*, A.D. 1720, gives a short account of Stanton Drew. But none of these writers, says Mr. Long, appear to have been aware of the existence of the cove, or of the circle which is near it, as their descriptions are confined to the portions of the structure in the field nearest the river Chew.

Collinson briefly describes Stanton Drew in his *History of Somerset*, published A.D. 1791 ; and Seyer in his *History of Bristol*, A.D. 1821, gives a more detailed account, with measurements of the stones and lithographic drawings. A plan of Stanton Drew is given by Sir R. C. Hoare in his *Modern Wilts*, from a survey by Mr. Crocker.



The COVE is situated a little to the south-west of the parish church, and is formed by three stones standing in an orchard. The two side stones are still standing, but that which formed the back is fallen down. These three stones are 18 inches thick, and the respective lengths of from 10 to 14 feet. The cove is 10 feet wide and about 8 feet deep, and opens to the south-east.\* The first circle is distant 157 yards from this cove in an easterly direction; the number of stones which originally composed the circle appears to have been twelve, and the diameter of the circle, according to Mr. Crocker, is 129 feet. There are now remaining in the orchard, in which it is partly situated six stones, and three in the adjoining field, and one under the wall which separates the orchard from the field, making ten in all; but the circle when complete probably consisted of twelve. 150 yards from this circle in a north-east direction, is the Great Circle, the diameter of which, according to Mr. Crocker's measurement, is from east to west 345 feet, and from north to south 378 feet. It is therefore, strictly speaking, an ellipse, with the longer axis from north to south. The number of stones remaining is fourteen, of which three only are standing, others are said to be beneath the surface. The tallest of the standing stones is  $7\frac{1}{2}$  feet high, and about 6 feet thick. They are all of a very rude appearance. The original number was probably twenty-four. Seyer says twenty-seven.

Eastward from the Great Circle, at a distance of 150 feet, is a circle of eight stones, its diameter is 96 feet; four only are now upright. Adjoining this circle on the east and south are seven scattered stones. The general

\* See Stukeley's *Itin. Curiosum*.

opinion respecting these stones (says Mr. Long) is "that they formed a sharply curving avenue which connected the circle of eight stones with the large circle."

From the mention made by Aubrey that the number of the stones had diminished much within a few years of his time, we may conjecture that the corresponding avenue which led to the great circle from the other circle in the orchard has been carried away or buried, and thus we have the structure at present in an imperfect state. The stones appear to have been procured near the spot where they now stand from a stratum about six feet under the surface. Most of the blocks are stated to be composed of conglomerate, which has been slightly coloured by red oxide of iron ; but there are others of a much finer grain. For a fuller account of the geology of the district I must refer to Mr. Long's paper in the *Archæological Journal*, vol. xv, p. 207, which will be found to contain, as I think, nearly all that can be said on the subject of Stanton Drew, and we have reason to feel thankful that in the present day, gentlemen of learning, ability, and leisure, can be found to undertake the elucidation of these interesting monuments.

It is a curious fact that all the measurements of the circles at Stanton Drew, as well as the account of the number of the stones in each, differ from each other. Since the above paper was written, a gentleman much interested in the study of antiquities, has surveyed and drawn with his own hand the circles, as well as measured each of the stones, and I find his measurements to differ considerably from those of Mr. Crocker, as well as from those given by preceding writers. I can only explain this by supposing that the points at which the measurements are taken are different, and so the diameters of the ovals or circles vary ; and

the distance of one circle from another varies as well. They all agree upon the main points, and in some cases the difference is only a few feet. In one or more instances stones which should have been taken into the circle are left out, in other instances they are included where they ought not.\*

The Somersetshire Archæological Society could not do a greater service to archæology than have a new and careful survey made, and the size and position of every stone indicated, as well as the position of each stone once known to exist. Recent investigations in other countries have thrown much light upon the study of megalithic structures, which appear to be common to all lands. Thus Dr. Hooker, in his *Himalayan Journal*, gives drawings as well as a description of the megalithic monuments in that region.† Speaking of the Khasia Mountains and the people that inhabit the district, he says, "The funeral ceremonies (*i.e.* of the Khasias) are the only ones of any importance, and are often conducted with barbaric pomp and expense; and rude stones of gigantic proportions are erected as monuments, singly, or in rows, circles, or supporting one another like those of Stonehenge, which they rival in dimensions and appearance." At page 319, he says, "Nurtiung contains a most remarkable collection of these sepulchral and other monuments, which form so curious a feature in the scenery of these mountains and in the habits of their savage population. They are all placed in a fine grove of trees, occupying a hollow, where several acres are covered with

\* The map which accompanies this paper is that of Mr. Crocker, revised by the kindness of a friend living near the spot, who has bestowed much pains upon it.

† See *Himalayan Journal*, vol. ii, c. xxix, p. 276, pl x, and c. xxx, p. 320.

gigantic, generally circular, slabs of stone, from 10 to 20 feet broad, supported 5 feet above the ground upon other blocks. For the most part they are buried in brushwood, and nettles and shrubs : but in one place there is an open area of fifty yards encircled by them, each with a gigantic headstone behind. Of the latter, the tallest was nearly 30 feet high, 6 broad, and 2 feet 8 inches thick, and must have been sunk at least 5 feet, and perhaps much more, in the ground. The flat slabs are generally of slate or hornstone, but many of them, and all the larger ones, were of Syenitic granite, split by heat and cold water with great art. They are erected by dint of sheer brute strength, the lever being the only aid. Large blocks of Syenite were scattered amongst these wonderful erections. The Nurtiung Stonehenge is no doubt in part religious, as the grove suggests, and also designed for cremations, the bodies being burned on altars. In the Khasia these upright stones are generally raised simply as memorials of great events, as of men whose ashes are not necessarily, though frequently, buried or deposited in hollow stone sarcophagi near them, or under horizontal slabs."

A paper of much interest, entitled "Descriptions of Cairns, Cromlechs, Kistvaens, and other Celtic, Druidical, or Scythian Monuments in the Dekhan," by Captain Meadows Taylor, has been published in the Transactions of the Royal Irish Academy, vol. xxiv, in which he cites examples of stone circles, and gives measurements of megalithic monuments which bear a striking resemblance to these found in our own island and in Brittany. Towards the conclusion of his paper he remarks on the great similarity which exists between the megalithic structures of the east and west, and says, "It is impossible to compare the views

and diagrams given by Mr. Higgins in his beautiful work, (Celtic Druids) with these of the Dekhan, without the conviction that however widely separated, geographically speaking, they must have had their origin in the same people, or people possessing the same faith, and using the same rites of sepulture." Any one of the Cromlechs or Kistvaens might be Kits Coty House, in Kent; while the great array of stones of Carnac, in Brittany, the Druidical Temple at Rowldrich, in Oxfordshire, or that of Abury, in Wilts, have this analogy with the rocks of Vibat-Hullie, or those around the great tumulus of cremations at Shahpoor.

The largest rock of Carnac, as given by Mr. Higgins, measures 22 feet high, 12 feet broad, and 6 feet thick, inclusive of what is concealed by the sand, and the weight as estimated by him is 256,800 lbs. The dimensions I give, if none are so high, are greater in girth, and on the same data of calculation of weight—200 lbs. per cubic foot of granite, would be 465,800 lbs., 432,000 lbs., and 324,000 lbs. respectively.

In relation to the fields of Cairns (Barrows) also, the plan of Stonehenge, with the circles irregularly disposed about it, agrees with the great group at Jewurgi, where they are only more numerous; while the great fields of Narkailepullee, Dewarkonda, Haiteepamela, and Goormutcal, would, if surveyed and planned, cast the fields of Mr. Higgins' diagrams and my own altogether into the shade. The same writer also refers to the Celtic remains in Dartmoor, given by Sir Gardiner Wilkinson, in the Journal of the Archæological Association, March and June, 1862, as also agreeing with those given in his paper. He says also, that "the very traditions agree most strangely." Mr. Higgins, p. 37, quotes Camden, in regard to the stones of



the Temple at Rowldrich, that "they were believed to be men turned into stones, and they were the king and his soldiers." So of the rocks of Shahpoor, those round the parallelogram are believed to be men : the largest being the chief, watching black and grey cattle, (the black, greenstone ; the grey, granite boulders), lying in the middle. The people of the country, especially the Beydurs, who are no doubt descendants of the aborigines, not of Aryans, believe this perfectly ; and also tell you in regard to the rocks placed at Vibat-Hullie, that "they were men who as they stood marking out the places for the elephants of the King of the Dwarfs, were turned into stones by him because they would not keep quiet."

The usual traditions in this country connect stone circles with a dance. Thus, at Stanton Drew they are "fiddlers" and the "maids," or the revel rout attendant on a marriage festival, and the whole the "wedding." For according to Stukeley, the country people believe that "a couple were married on a Sunday, and the friends and guests were so profane as to dance upon the green together, and by a divine judgment were turned into stones." There are also the "nine maids" in Cornwall, the "nine ladies" in Derbyshire, and "Long Megg and her daughters" in Cumberland, all of which seem to carry our ideas to marriage festivity and dancing.

In Brittany, at Carnac, the common idea is that the stones, which are very numerous, and extend to a great distance, being eight miles long, with an average width of two hundred feet,\* were an army turned into stone. This monument for its vast extent, if not for the size of its

\* See Mr. Bathurst Dean's paper in the *Archæological Journal*, vol. xxv, and his work on "Serpent Worship," p. 369.



stones, is certainly one of the most striking anywhere to be seen. The work is traditionally ascribed to the Croins, men or demons two or three feet high, who carried the rocks in their hands and placed them there. This, according to Capt. Meadows Taylor, agrees with the Indian traditions. See p. 362.

If any one has walked from Marlborough up Clatford Bottom, to the Cromlechs there, and has noted the continuous wavy line of Sarsen stones which fill the valley, and has imagined the largest of these to be placed on end, and continued in parallel rows all through the valley far beyond the Cromlech, he will have a good idea of the Celtic monument at Carnac, and will probably be of opinion that these stones at Carnac, which are now set upright, once lay prostrate upon the surface of the ground, like the grey wethers on the Marlborough Downs, but that they were gradually placed upright, and used to record the dead buried under or near them. Remains of ancient interments have been found in Brittany, at the foot of these stones, both weapons and ornaments, and it was therefore most probably a gigantic necropolis—a common burial ground for a large tribe, or it may be for several tribes united, while the megalithic circles on the continent and in our own island probably answered the purposes of great religious gatherings at funerals, or on great public occasions. It is curious that researches into these megalithic structures should bring us much to the same result as the study of the science of language seems to have brought the most learned philologists. Professor Max Müller, in concluding his learned lectures on the Science of Languages,\* observes “the science of language thus

\*See Lectures given at the Royal Institution, London, in 1861, p. 398-9.

leads up to the highest summit, from whence we see into the very dawn of man's life on earth, and where the words which we have so often heard from the days of our childhood, 'and the whole earth was of one language, and of one spirit,'—assume a meaning more natural, more intelligible, more convincing than they ever had before." Surely the study of these megalithic remains leads us back to a central point from whence the human family at first had its origin, before it became scattered over the face of the earth; surely they indicate a similarity of custom both of burial and of worship. They indicate a universal habit derived from a common centre.

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While this paper was passing through the press, some remarks on the subject were made by Dr. Hooker, in his address to the British Association in August, 1868. In it he presses upon the Association "the great and urgent importance of adopting active measures to obtain reports on the physical form, manners and customs of the indigenous populations of India, and especially of those tribes which are still in the habit of erecting megalithic monuments," and states that systematic efforts are now being made by the Government of India to obtain photographs and histories of the native Indian tribes, and that Captain Meadows Taylor has been appointed to the literary and scientific portion of the work.

He says, "It will no doubt surprise many to be told that there exists within 300 miles of the capital of India, a tribe of semi-savages who habitually erect Dolmens, Menhirs, Cists, and Cromlechs, almost as gigantic in their proportions, and very similar in their appearance

and construction to the so-called Druidical remains of Western Europe; and what is still more curious, though described and figured nearly a quarter of a century ago by Colonel Yule, the eminent Oriental Geographer, except by Sir J. Lubbock, they are scarcely alluded to in the modern literature of pre-historic monuments.

In the Bengal Asiatic Journal for 1844, are to be found Colonel Yule's descriptions of the Khasia people of East Bengal, "an Indo-Chinese race, who keep cattle but drink no milk; estimate distances traversed by the mouthfuls of pawn chewed *en route*; and among whom the marriage tie is so loose, that the son commonly forgets his father, when the sister's son inherits property and rank."

Dr. Hooker states that he and Dr. Thompson dwelt for some months among the Khasia people eighteen years ago, and found Colonel Yule's account to be correct in all particulars. The undulatory eminences of the country, some 4000 to 6000 feet above the level of the sea, are dotted with groups of huge, unpolished, square pillars, and tabular slabs, supported on three or four rude piers. In one spot, buried in a sand grove, they found a nearly complete circle of Menhirs, the tallest of which was 30 feet out of the ground, 6 feet broad, and 2 feet 8 inches thick, and in front of each was a Dolmen or Cromlech of proportionately gigantic pieces of rock; while the largest slab hitherto measured is 32 feet high, 15 feet broad, and 2 feet thick. Several were recently erected, and they were told that every year some are put up, but not in the rainy season. The method of removing the blocks is by cutting grooves, along which fires are lit, and into which, when heated, cold water is run, which causes the rock to fissure along the groove. The lever and rope are the only mechanical aids used in transporting and erecting the blocks. The objects

of these erections are various—sepulture, marking spots where public events had occurred, &c.

The Khasia word for a stone “man” as commonly occurs in the name of their villages and places, as that of man, maen, and men, does in those of Brittany, Wales, Cornwall, &c. Thus mansmai signifies in Khasia, the stone of oath; manloo, the stone of salt; manflong, the grassy stone; just as in Wales, Pen-maen-maur, signifies the hill of the big stone; and in Brittany, a Maenhir is a standing stone; and a Dolmen, a table stone. As this country has now been opened to English scientific investigation, and a British cantonment established among the people, we may look for a fuller description of their manners and customs, as well as their megalithic monuments, and as Dr. Hooker observes, it will throw great light upon that obscure and important branch of pre-historic archæology—the megalithic monuments of Western Europe.

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# Somersetshire Archaeological and Natural History Society.

1868.

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# Societies in Correspondence

With the Somersetshire Archæological and Natural History Society.

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*The Archæological Institute of Great Britain.*

*The Ecclesiological Society.*

*The Bristol and West of England Architectural Society.*

*The Associated Architectural Societies of Northampton, &c., &c.*

*The Sussex Archæological Society.*

*The British Archæological Association.*

*The Surrey Archæological Society.*

*The Kilkenny and South East of Ireland Archæological Society.*

*The Suffolk Institute of Archæology and Natural History.*

*Société Vaudoise des Sciences Naturelles, Lausanne.*

*The Lancashire Historic Society.*

*The Chester Local Archæological Society.*

*The Society of Antiquaries.*

*The Wiltshire Archæological and Natural History Society.*

*University College, Toronto.*

*Smithsonian Institution, Washington, U.S.*

*Imperial and Royal Geographical Society of Vienna.*

*Society of Antiquaries of Scotland.*

*Literary and Philosophical Society of Manchester.*

*The London and Middlesex Archæological Society.*

*The Royal Dublin Society.*

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## Rules.

THIS Society shall be denominated "THE SOMERSETSHIRE ARCHÆOLOGICAL AND NATURAL HISTORY SOCIETY;" and its object shall be the cultivation of, and collecting information on, Archæology and Natural History in their various branches, but more particularly in connection with the County of Somerset.

II.—The Society shall consist of a Patron, elected for life; a President; Vice Presidents; General, and District or Local Secretaries; and a Treasurer, elected at each Anniversary Meeting; with a Committee of twelve, six of whom shall go out annually by rotation, but may be re-elected. No person shall be elected on the Committee until he shall have been six months a Member of the Society.

III.—Anniversary General Meetings shall be held for the purpose of electing the Officers, of receiving the Report of the Committee for the past year, and of transacting all other necessary business, at such time and place as the Committee shall appoint, of which Meetings three weeks' notice shall be given to the Members.

IV.—There shall also be a General Meeting, fixed by the Committee, for the purpose of receiving Reports, reading Papers, and transacting business. All Members shall have the privilege of introducing one friend to the Anniversary and General Meetings.

V.—The Committee is empowered to call Special Meetings of the Society upon receiving a requisition signed by ten Members. Three weeks' notice of such Special Meeting and its object shall be given to each Member.

VI.—The affairs of the Society shall be directed by the Committee (of which the Officers of the Society shall be *ex-officio* Members) which shall hold Monthly Meetings for receiving Reports from the Secretaries and Sub-Committees, and for transacting other necessary business; five of the Committee shall be a quorum. Members may attend the Monthly Committee Meetings after the Official Business has been transacted.

VII.—The Chairman, at Meetings of the Society, shall have a casting vote in addition to his vote as a Member.

VIII.—One (at least) of the Secretaries shall attend each Meeting, and shall keep a record of its proceedings. All Manuscripts and Communications and the other property of the Society shall be under the charge of the Secretaries.

IX.—Candidates for admission as Members shall be proposed by two Members at any of the General or Committee Meetings, and the election shall be determined by ballot at the next Committee or General Meeting; three-fourths of the Members present balloting shall elect. The Rules of the Society shall be subscribed by every person becoming a Member.

X.—Ladies shall be eligible as Members of the Society without ballot, being proposed by two Members and approved by the majority of the Meeting.

XI.—Each Member shall pay Ten Shillings on admission to the Society, and Ten Shillings as an Annual Subscription, which shall become due on the 1st of January in each year, and shall be paid in advance.

XII.—Donors of Ten Guineas or upwards shall be Members for life.

XIII.—At General Meetings of the Society the Committee may recommend persons to be balloted for as Honorary or Corresponding Members.

XIV.—When any office shall become vacant or any new appointment shall be requisite, the Committee shall have power to fill up the same; such appointments shall remain in force only till the next General Meeting, when they shall be either confirmed or annulled.

XV.—The Treasurer shall receive all Subscriptions and Donations made to the Society, and shall pay all accounts passed by the Committee; he shall keep a book of receipts and payments, which he shall produce whenever the Committee shall require it; the accounts shall be audited previous to the Anniversary Meeting by two Members of the Committee, chosen for that purpose; and an abstract of them shall be read at the Meeting.

XVI.—No change shall be made in the Laws of the Society, except at a General or Special Meeting, at which twelve Members at least shall be present. Of the proposed change a month's notice shall be given to the Secretaries who shall communicate the same to each Member three weeks before the Meeting.

XVII.—Papers read at Meetings of the Society, and considered by the Committee of sufficient interest for publication, shall be forwarded (with the author's consent) to such periodical as shall be determined by the Committee to be the best for the purpose, with a request that a number of such papers may be printed separately, for distribution to the Members of the Society, either gratuitously or for such payment as may be agreed on.

XVIII.—No religious or political discussions shall be permitted at Meetings of the Society.

XIX.—That any persons contributing Books or Specimens to the Museum shall be at liberty to resume possession of them in the event of the property of the Society ever being sold or transferred to any other county. Also, persons shall have liberty to deposit Books or Specimens for a specific time only.

N.B.—One of the objects of the Society shall be to collect, by donation or purchase, a Library and Museum, more particularly illustrating the History (Natural, Civil, and Ecclesiastical) of the County of Somerset.

*\*\*\* It is requested that Contributions to the Museum or Library be sent to the Curator, at the Society's Rooms, Taunton.*

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 Poole, J. R., *Cannington*  
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